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Field Service Procedure

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Narkomed 6000 Version 2.06 Upgrade

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Narkomed 6000
Version 2.06 Upgrade

Installation Procedures

1.0 Integrated Patient Monitor Exchange (if applicable)

NOTE: This procedure includes the replacement of the original IPM pod (P/N 4113465-001) with a modified IPM pod. The part number of this pod is now (SE) 4113465-005.

1.1 Turn the System Power switch to STANDBY.

1.2 Remove AC power from the machine and pull all circuit breakers to their 'out' position.

1.3 Loosen the captive mounting screw on the IPM module and carefully remove the assembly from the machine.

1.4 While supporting the IPM, disconnect the Vitalbus cable from the back of the module.

1.5 Record the serial number of the removed IPM on the report.

1.6 Record the serial number of the replacement IPM on the report. Update the new part number and serial number in the Narkomed 6000's Advanced Service Menu Service Parts notebook at the completion of this machine modification.

1.7 Connect the Vitalbus cable to the replacement IPM.

1.8 Slide the IPM into the machine and secure it with its captive screw.

1.9 After completing the remaining sections (2 thru 9) of this service procedure, perform the IPM test procedure given in Section 6A of the Narkomed 6000 Technical Service Manual.

1.10 Restore AC power to the machine and enable the circuit breakers.

1.11 Obtain a Returned Materials Authorization (RMA) for the original IPM pod assembly, P/N SE4113465-001, and ship it within 24 hours (overnite delivery) to DMI Telford via Federal Express. Line #2 of the Air Bill shall indicate Code "B-1."

NOTE: DMI's Federal Express account number is available upon request to offset the freight charges for this specific shipment. Contact DMI's Technical Service Department for additional information.

2.0 CPU1 PCB Replacement and CPU2 Firmware Update to 7.40.

NOTE: This procedure includes the replacement of the original CPU1 (P/N 8305141) with a modified CPU1 circuit board P/N SE8604038 that increases the PCB's lithium battery required replacement interval from one year to six years. Software version 7.40 is installed on this modified CPU1. The CPU2 firmware version 7.40 P/N 4116983-002 included in the kit must be installed on CPU2.

CAUTION: The firmware E-PROMs used in the Divan ventilator are installed as a set of components on CPU1 AND CPU2 PCBs, and the software versions on each PCB must be identical.

2.1 Turn the System Power switch to STANDBY. Start the Divan in Service Mode by pressing on the left pad of the STANDBY button and the pad above it, while turning the System Power switch to ON. Turn the knob to display LOGBOOK and press the knob. Review the last ten logbook entries. Press the knob to exit the function.

2.2 TOTAL HOURS. Press the knob and record the hours shown on the 7-segment display for Vt and Rate for future reference. Press the knob to exit the function.

2.3 Turn the knob to display OPERATING HOURS. Press the knob and record the hours shown on the 7-segment display for Vt and Rate for future reference. Press the knob to exit the function.

2.4 Turn the System Power switch to STANDBY.

2.5 Remove AC power from the machine and pull all circuit breakers to their 'out' position.

CAUTION: Use ESD precautions when handling any of the Divan electronics assemblies. These boards contain static sensitive components.

2.6 Raise the Divan table top cover to its open position.

2.7 Remove the cover plate at the right side of the Divan assembly.

2.8 Remove the board retainer.

2.9 Identify the location of CPU1 at the Divan's extreme right position. See Figure 1.

NOTE: CPU1 PCB contains a large round lithium battery and is identified as CPU-STANDARD 2.

CPU2 PCB contains a 7-segment LED and is identified as LP-CPU.

2.10 Carefully unplug the original CPU1 from the motherboard by raising it straight up and out of its socket.

2.11 Insert the replacement CPU1 P/N SE8604038 in the appropriate location. Be certain the PCB is properly aligned and fully seated into the socket. Update the new part number and serial number in the Narkomed 6000's Advanced Service Menu Service Parts notebook at the completion of this machine modification.

Installation Procedures (continued)

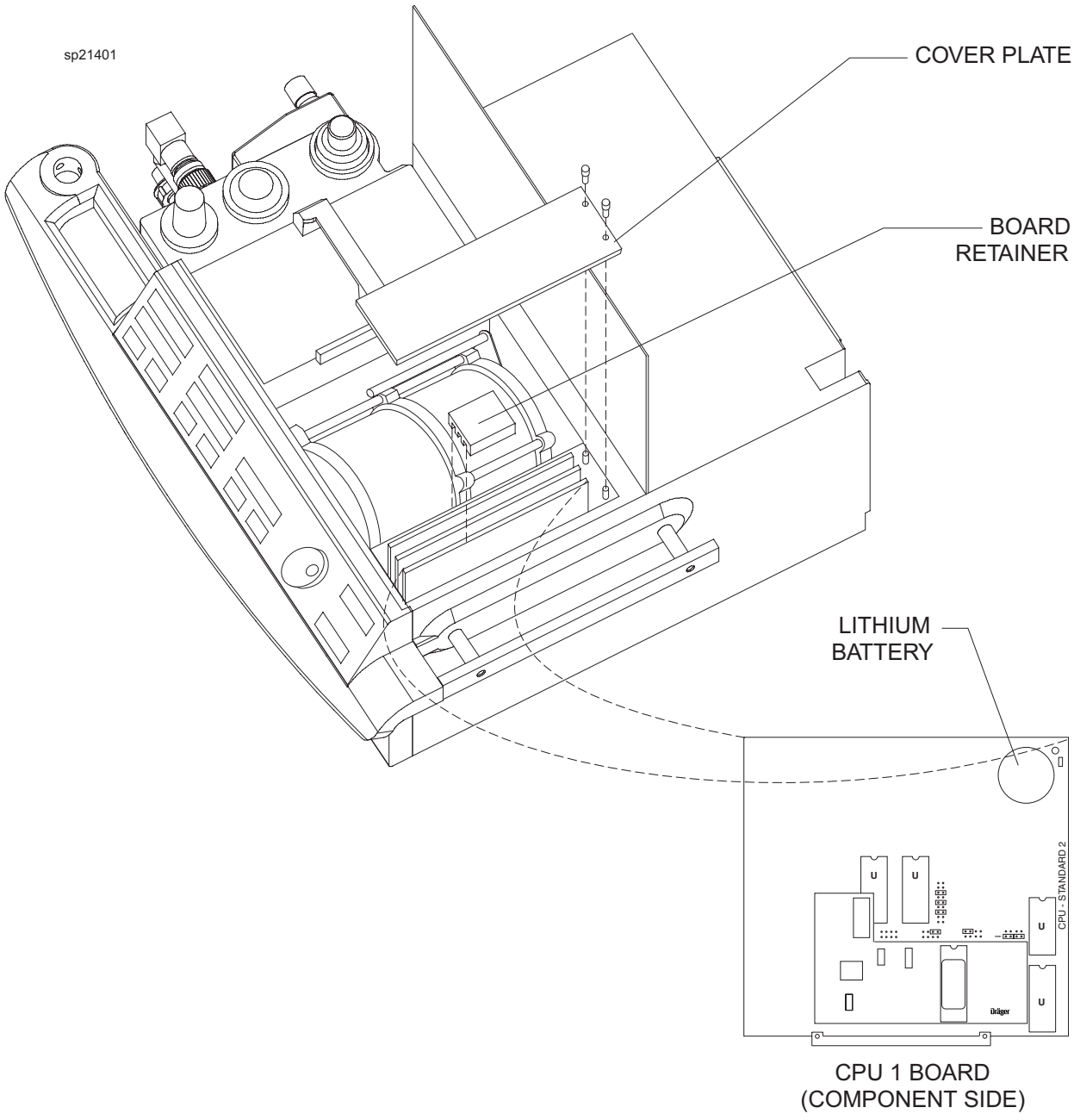

FIGURE 1. CPU1 Location

Installation Procedures (continued)

2.12 Remove the ribbon data cable from CPU2 and ADDA PCBs. Ref. Figure 3.

2.13 Carefully unplug CPU2 from the motherboard by raising it straight up and out of its socket.

2.14 Locate the E-PROM on CPU2. See Figure 2.

2.15 Using an IC extraction tool, remove the E-PROM from CPU2.

2.16 Using an IC insertion tool, carefully install software version 7.40 E-PROM P/N4116983-002 on CPU2. Pay particular attention to the correct orientation of the E-PROM and verify all pins are properly seated into their corresponding sockets.

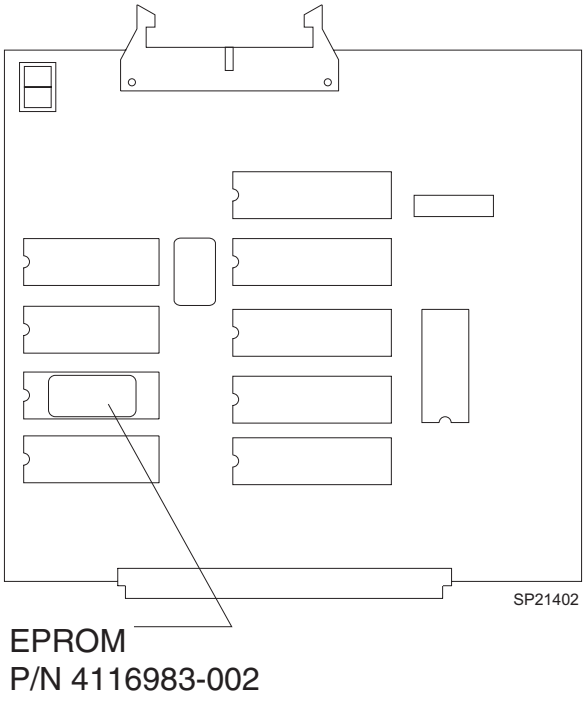

FIGURE 2. CPU2 E-PROM Location

2.17 Reinstall CPU2 in the appropriate motherboard location. Be certain the PCB header is properly aligned and fully seated into the socket.

2.18 Reconnect the ribbon cable to CPU2 and ADDA PCBs.

2.19 Reinstall the board retainer over the PCBs.

2.20 Reinstall the cover plate over the PCB area (after completion of the PMC).

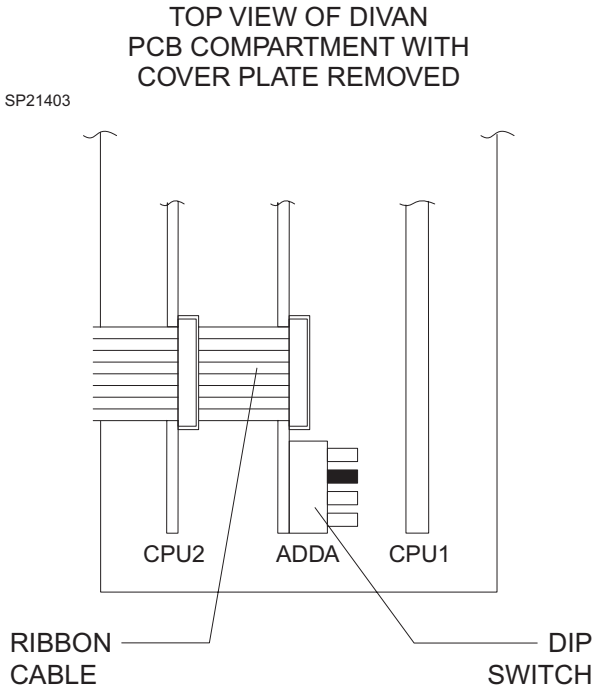

FIGURE 3. DIP Switch Locations

2.21 Restore AC power to the machine and enable the circuit breakers.

2.22 Start the Divan in Service Mode by pressing and holding the left pad of the Standby button and the pad above it while turning the System Power switch to ON. Verify and or make the following adjustments:

Installation Procedures (continued)

NOTE: Faults Nr., (Stoung Nr.) 7, 9, 12, 16, or 26 may be encountered and are normal immediately upon power-up after CPU replacement and firmware updates.

2.23 **Select Language:** Press the rotary dial to select U.S. Version 07.40. Press the rotary knob to exit the function.

2.24 **Removal Position:** Turn the rotary knob to display removal pos., then press the knob to confirm. The screen will display **Adjust Piston**, then starting with the left side of the bar graph half lit, turn the rotary knob to move the illuminated bar graph one segment to the left. Unlatch the Breasy and attempt to remove the piston cylinder, then install the piston cylinder unit. Repeat this process until the piston begins to be difficult to remove, then note this location on the bar graph display.

Now starting with the left side of the bar graph half lit, turn the rotary knob to move the illuminated bar graph one segment to the right and attempt to remove then install the piston cylinder.Repeat this process until the piston begins to be difficult to remove, then note this location on the bar graph display.

Determine the algebraic mean of the two extreme reference points, then turn the rotary knob until the bar graph LED indicates this value. Confirm the piston cylinder unit can be easily removed and installed. Close the latch on the Breasy. Press the rotary knob to exit the function.

2.25 **Select System:** Turn the rotary knob to display **Select System**, then press the knob to confirm selection. Turn the rotary knob to select **Cicero EM**, then press the knob to confirm. Press the rotary knob to exit the function.

2.26 **Total Hours:** Using a non-conductive tool, set the third DIP switch on the ADDA PCB to the down position. See Figure 3. Turn the rotary knob to display **Total Hours**, then press the knob to confirm selection. Reenter the total hours information as follows:

Rate key increments the 10,000s digit (range 0-2).

I:E key increments the 1,000s digit (range 0-9 or 0-5).

%I.P./Flow key increments the 100s digit (range 0-9).

PEEP key increments the 10s digit (range 0-9).

SIMV Rate key increments the 1s digit (range 0-9).

NOTE: If the value is zero, the LED segment remains blank. If the 10,000s digit is set to 2, then the 1,000s and 100s digits can only be altered in the range of 0-5.

2.27 Press the Pmax key to enter the displayed value into memory.

2.28 Press the rotary knob to exit the function.

Installation Procedures (continued)

2.29 **Operating Hours:** Turn the rotary knob to display **Operating Hours**, then press the knob to confirm selection. Press the Pmax key to enter information as follows:

Rate key increments the 10,000s digit (range 0-2).

I:E key increments the 1,000s digit (range 0-9 or 0-5).

%I.P./Flow key increments the 100s digit (range 0-9).

PEEP key increments the 10s digit (range 0-9).

SIMV Rate key increments the 1s digit (range 0-9).

NOTE: If the value is zero, the LED segment remains blank. If the 10,000s digit is set to 2, then the 1,000s and 100s digits can only be altered in the range of 0-5.

2.30 Press the Pmax key to enter the displayed value into memory.

2.31 **Select Parameter:** Turn the rotary knob to display **Select Parameter**, then press the knob to confirm selection. The display will then indicate **Default Settings**. Refer to the chart below and touch each key to display the current default value. If a parameter requires adjustment, rotate the knob to make the correct setting, then press the rotary knob twice to exit the function.

Parameter	Setting
Pmax	30
I:E	1.0 : 2.0

2.32 **Display Config:** Rotate the knob to show **display config.**, then press the knob to confirm selection. Scroll the knob to show **Display ON**, then press the knob to exit the function.

2.33 **Confirm Mode:** Turn the rotary knob to display **Confirm Mode**, then press the knob to confirm selection.Turn the rotary knob to select **Confirm R-Knob**, then press the knob to exit the function.

2.34 **Cancel Test:** Turn the rotary knob to display **Cancel Test**, then press the knob to confirm selection. Turn the rotary knob to select **Limited**, then press the knob to confirm. press the rotary knob to exit the function.

2.35 **Log Book:** Turn the knob to select **log book**, then press the knob.

2.36 Press the Pmax key to reset the display to [0000] 000 00H.

2.37 Using a non-conductive tool, return the 3rd DIP switch to its original (up) position.

2.38 Turn the System Power switch to STANDBY.

2.39 Reinstall the cover plate over the PCB area (after completion of the PMC).

2.40 Obtain a Returned Materials Authorization (RMA) for the original CPU-1 PCB assembly, P/N SE8305141, and ship it within 24 hours (overnite delivery) to DMI Telford via Federal Express. Line #2 of the Air Bill shall indicate Code "B-1."

NOTE: DMI's Federal Express account number is available upon request to offset the freight charges for this specific shipment. Contact DMI's Technical Service Department for additional information.

Installation Procedures (continued)

3.0 Operator's Manual Update

3.1 Locate the Operator's Instruction Manual 3-ring binder assembly.

3.2 Locate and discard the existing "Narkomed 6000 Anesthesia Machine" manual and insert the updated version of this manual P/N 41149115-008 in its place.

3.3 If the machine is fitted with an IPM pod, locate and discard the existing "Integrated Patient Option for the Narkomed 6000 Anesthesia Machine" manual and insert the updated version of this manual P/N 4116574-002 in its place.

4.0 Divan Leak Test Plug Relocation

4.1 Remove the existing leak test plug.Obtain a Returned Materials Authorization (RMA) for the original plug, P/N 4114550, and ship it within 24 hours (overnite delivery) to DMI Telford via Federal Express. Line #2 of the Air Bill shall indicate Code "B-1." Insert and secure a ¼-28 x ½ in. button head screw P/N HW09079 in this location using red Loctite #271. See Figure 4.

NOTE: DMI's Federal Express account number is available upon request to offset the freight charges for this specific shipment. Contact DMI's Technical Service Department for additional information.

4.2 Remove and discard the original bag mount T-bar assembly by un-threading its mounting collar, and install the new style bag mount T-bar with test plug.

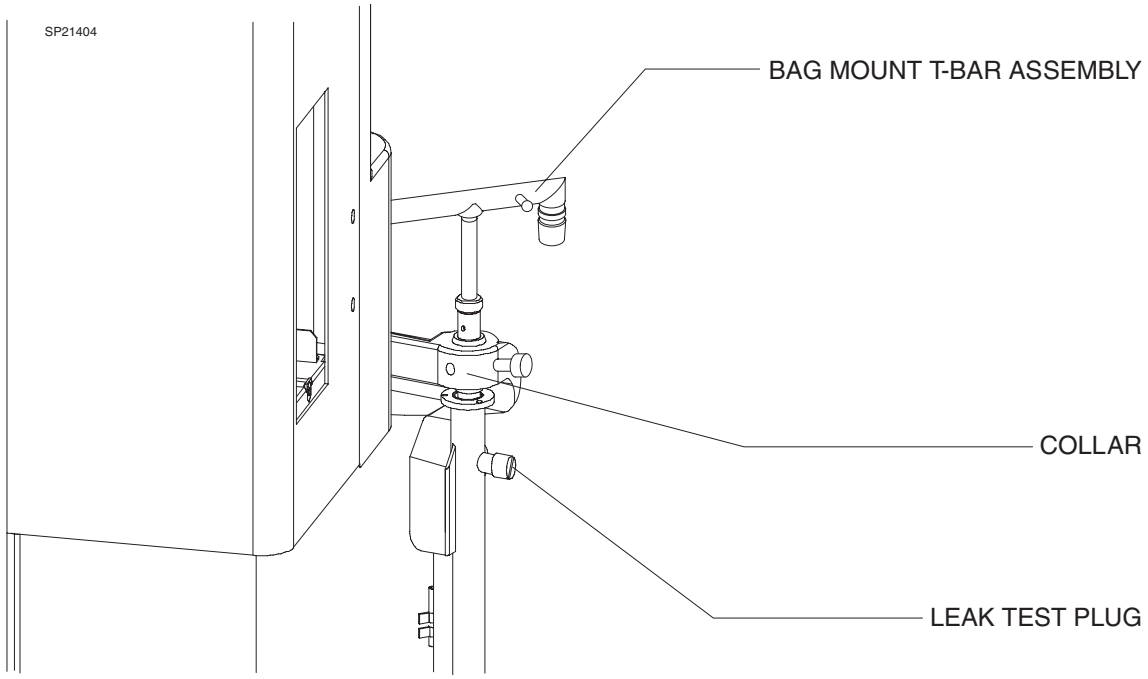

FIGURE 4. Divan Leak Test Plug

Installation Procedures (continued)

5.0 Suction Warning Label Installation

5.1 Affix suction warning label P/N 4117092 to the table lamp assembly. Place the label one inch up from the table top and one inch from the left edge of the panel as shown in Figure 5.

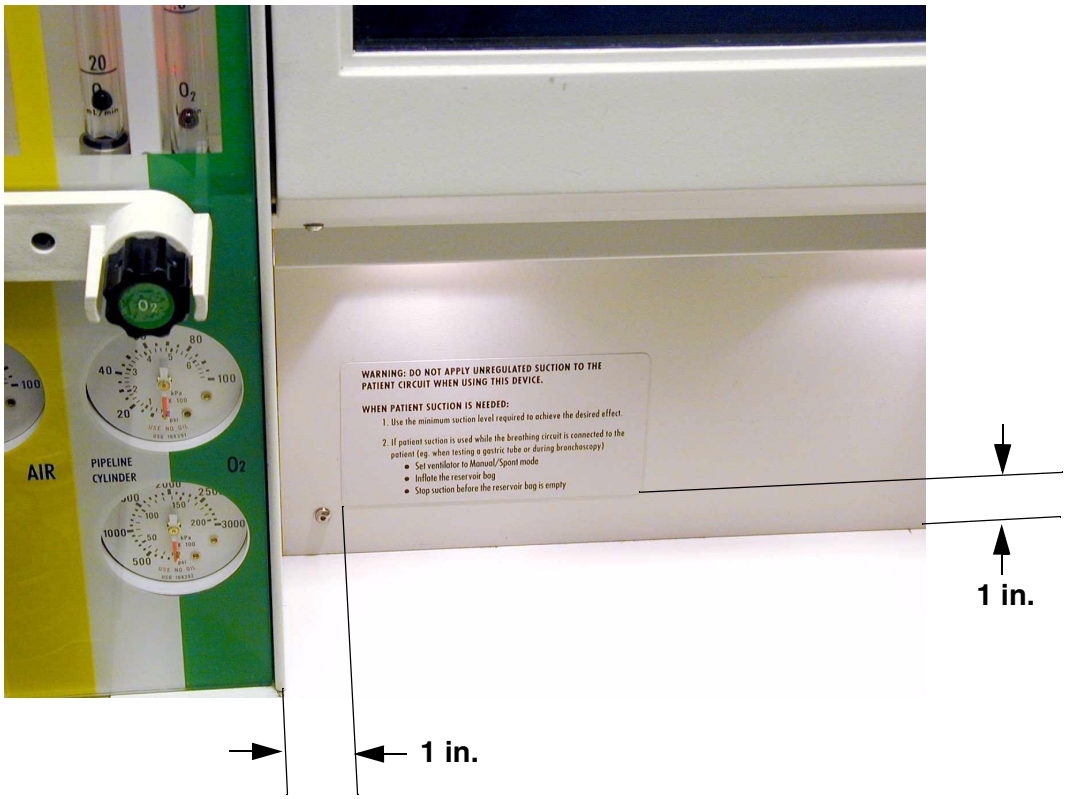
WARNING: DO NOT APPLY UNREGULATED SUCTION TO THE PATIENT CIRCUIT WHEN USING THIS DEVICE.
WHEN PATIENT SUCTION IS NEEDED:
1. Use the minimum suction level required to achieve the desired effect.
2. If patient suction is used while the breathing circuit is connected to the patient (eg. when testing a gastric tube or during bronchoscopy)
• Set ventilator to Manual/Spont mode
• Inflate the reservoir bag
• Stop suction before the reservoir bag is empty
AIR
PIPELINE CYLINDER
O2
1 in.
1 in.

FIGURE 5. Suction Warning Label

6.0 WPU System I/O PCB Clamp and Keylok Options Installation

6.1 Remove AC power from the machine and pull all circuit breakers to their 'out' position.

WARNING: Before servicing, ensure that AC power is removed from the machine and all circuit breakers are disengaged (pulled out). Failure to observe this precaution may cause injury by electrical shock.

CAUTION: Use ESD precautions when handling any of the electronics assemblies. These boards contain static sensitive components.

6.2 Close all cylinder valves and remove the cylinders from their yokes.

6.3 Remove the Vitalbus Hub mounting hardware (do not disassemble the hinge hardware). Remove the power cord strain relief retainer and swing open the assembly.

6.4 Remove the lower left back panel mounting hardware and remove the panel from the machine.

6.5 Remove the row of power supply cables located closest to the WPU assembly.

6.6 Remove the System I/O cable.

6.7 Remove the WPU cover plate.

6.8 Locate the hardware securing the expansion card brackets at the top right corner of the WPU and remove the top three screws.

6.9 Locate the System I/O PCB and carefully pull the System I/O PCB out from the motherboard. See Figure 6.

Installation Procedures (continued)

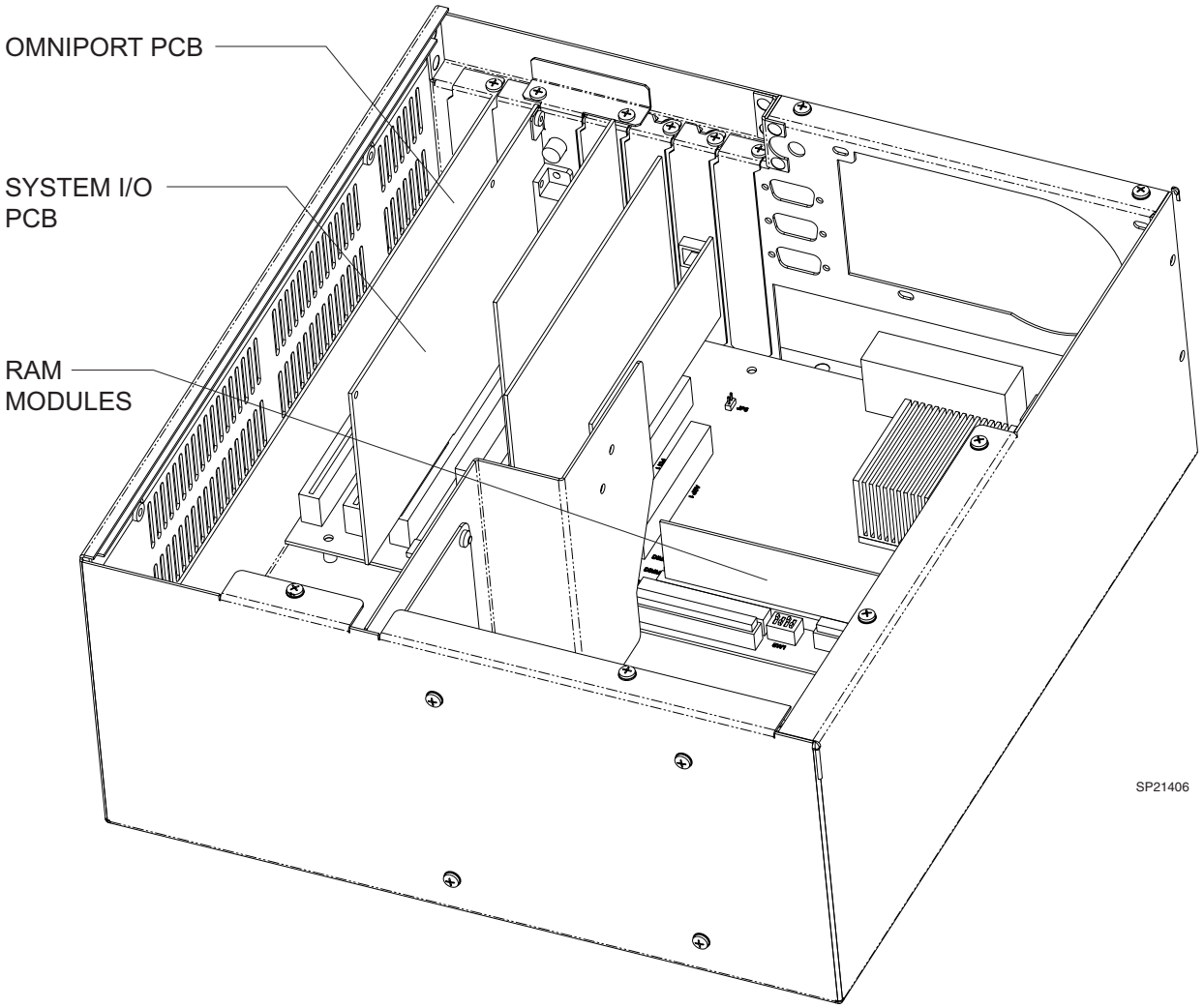

FIGURE 6. WPU Component Identification

Installation Procedures (continued)

6.10 Note the locations and orientation of the components attached to the PCB mounting bracket, then remove the Serial Port Power connector and thumbscrew spacers from the System I/O bracket. If applicable, also remove and discard the button head screws and washers securing the System I/O PCB to its bracket. See Figure 7.

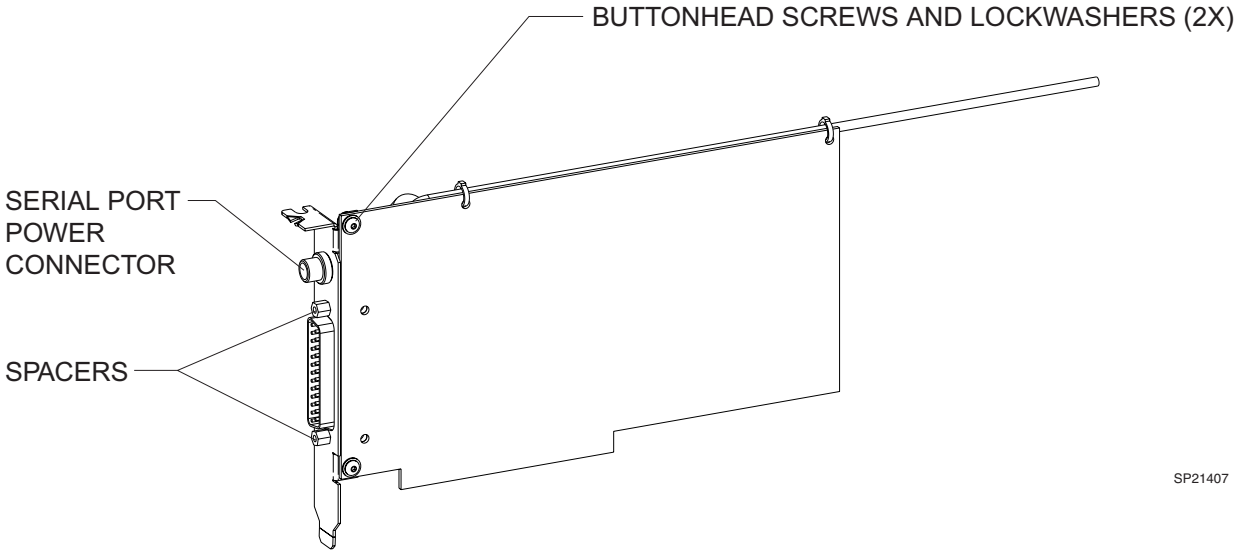

FIGURE 7. System I/O Components

Installation Procedures (continued)

6.11 Secure the System I/O PCB to the new mounting bracket using two new button head screws and lock washers. Reattach the Serial Port power connector to this bracket.

6.12 Apply Blue Loctite #425 to the threads of the thumbscrew spacers and reinstall them into the header connector.

CAUTION: Do not use any other type of Loctite as damage to plastic components may result.

6.13 Reinsert the System I/O PCB into its original slot in the motherboard PCB, and make certain the assembly is fully seated and its chassis mounting bracket is flush with the chassis.

6.14 Install the PCB bracket clamp as shown in Figure 8 using two of the three mounting screws previously removed.

CAUTION: Tighten the lower screw first to reduce the possibility of stripping the threads.

6.15 Grasp the System I/O PCB near the top button head mounting screw and verify the assembly can not be rocked back and forth toward the chassis.

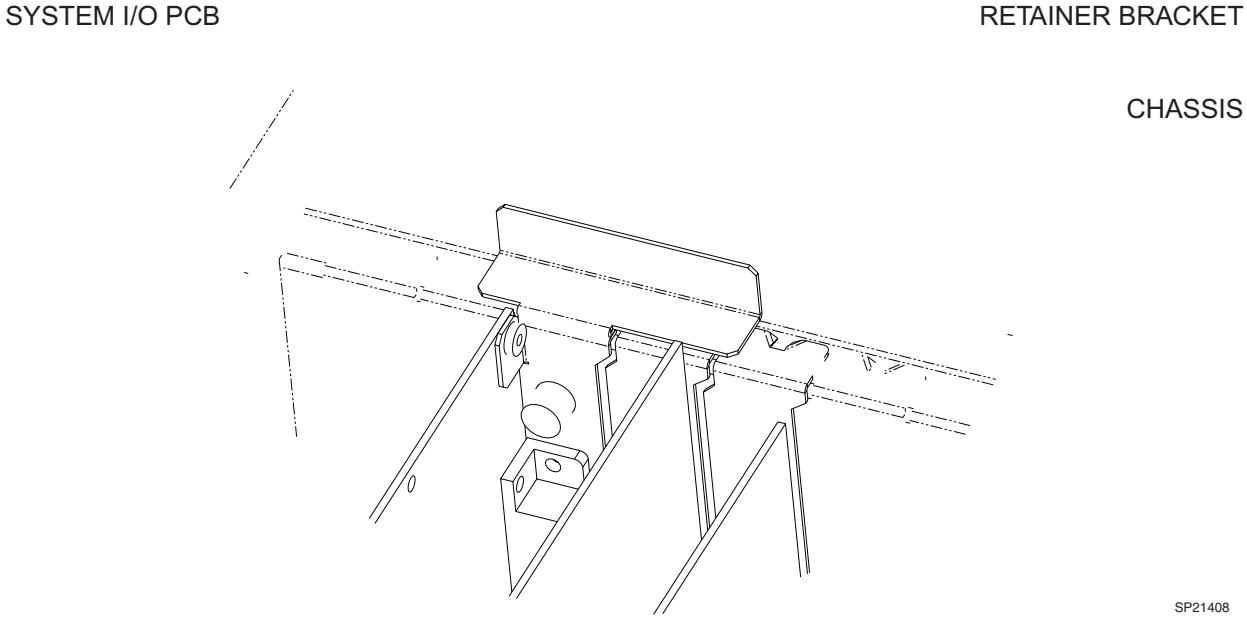

FIGURE 8. PCB Bracket Mounting Clamp

Installation Procedures (continued)

6.16 Identify the number of Vitalbus HUB communication ports. Skip to Step 6.18 if the Vitalbus HUB assembly contains only a single COM port. See Figure 9.

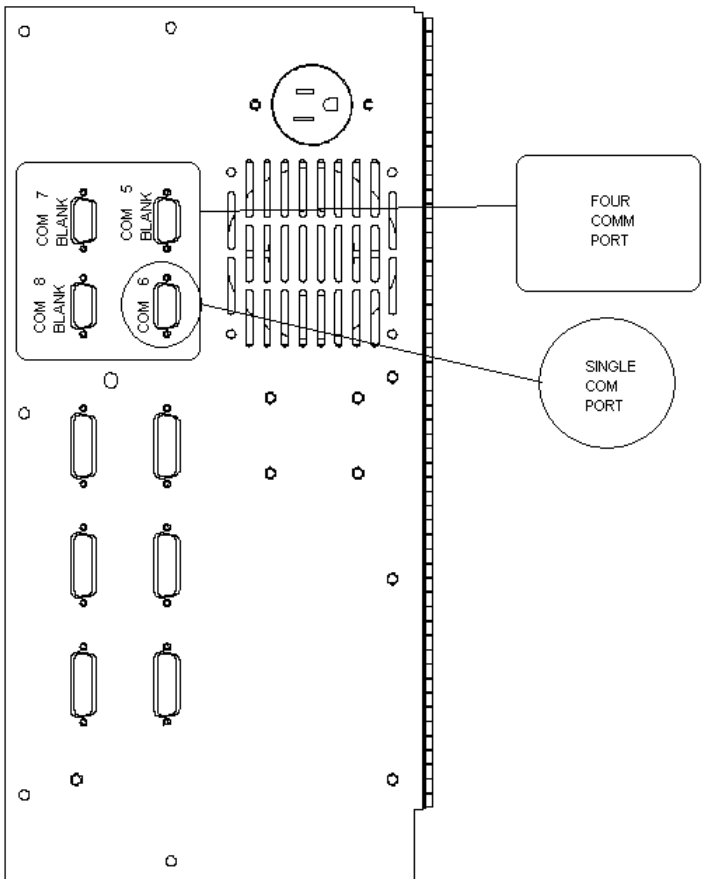

FIGURE 9. Vitalbus Comm Port Options

Installation Procedures (continued)

6.17 Locate the Omniport PCB within the WPU. See Figure 6, WPU Component Identification. Verify the PCB is correctly aligned into the WPU's vertical retaining channel (opposite end from the PCB's mounting clamp). Also verify the header connector is completely seated into the motherboard PCB. Refer to the locating arrows at the left side of the connector in the example of an Omniport PCB partially dislodged from the motherboard PCB. See Figure 10, Onmiport PCB Dislodged.

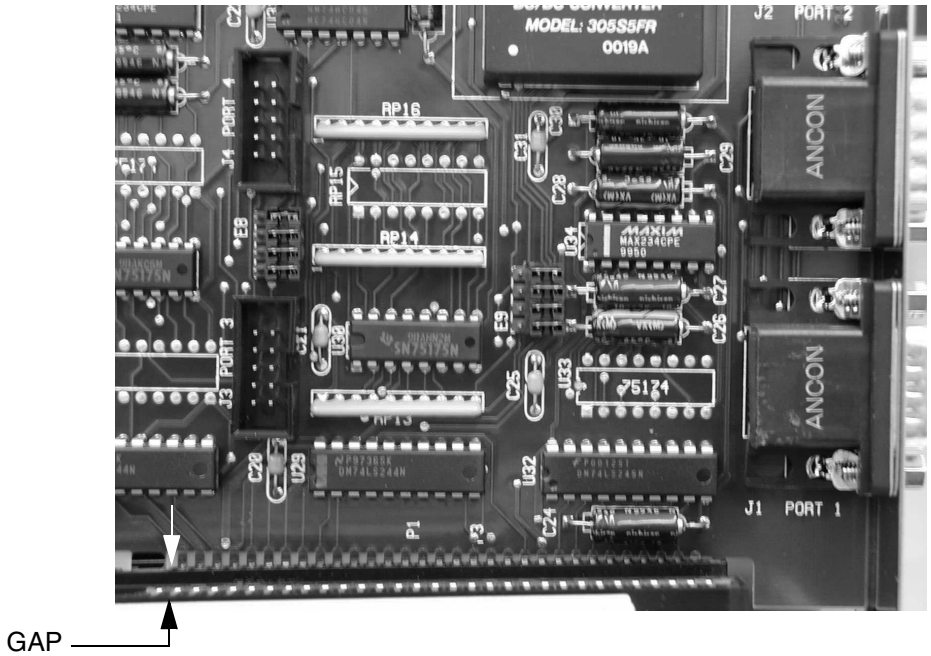

FIGURE 10. Omniport PCB Dislodged

Installation Procedures (continued)

6.18 Locate the memory (RAM) modules within the WPU. Refer to Figure 6, WPU Component Identification. Verify all RAM modules are perpendicular to the motherboard and the retaining clips at each end of the modules are properly secure. The round section of the clip shall be snapped into place on the component side (right side) of the RAM module to make proper connection. An example of an unclipped memory module is shown in Figure 11, Dislodged RAM Module. Observe that the memory module at the far right does not have its clip fastened properly. Also, the RAM module is tilted to the right, forcing the module and the motherboard connections to pull away from each other.

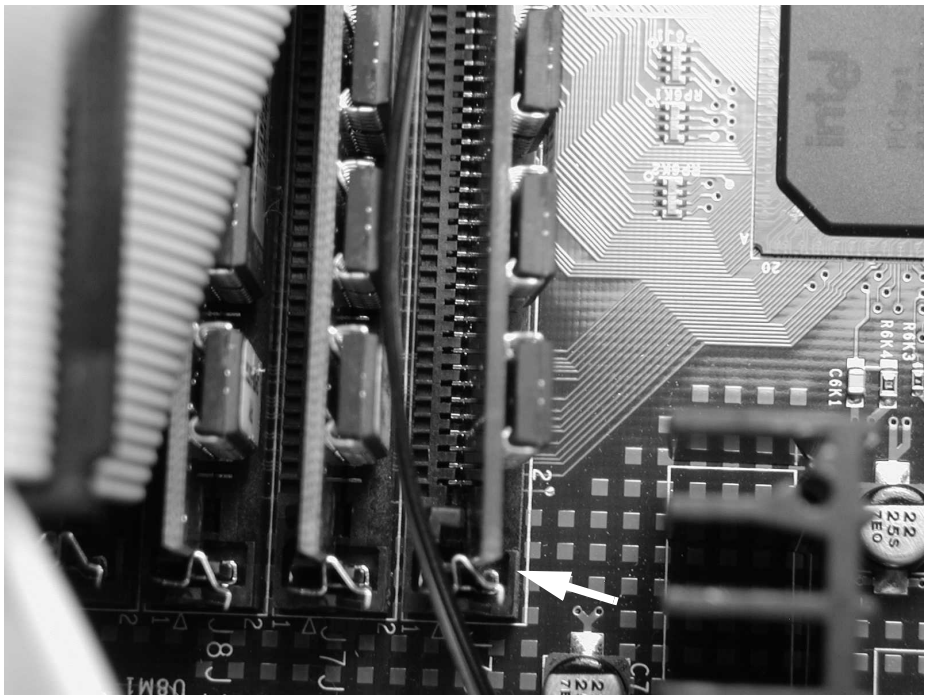

FIGURE 11. Dislodged RAM Module

Installation Procedures (continued)

6.19 If there is a significant amount of dust and lint buildup in the WPU assembly, use a current limiting ESD vacuum cleaner (Ohmega Supreme or equivalent) to eliminate the debris.

6.20 Reinstall the WPU cover plate.

6.21 Affix a System I/O Rework Completed label to the WPU cover plate below the existing label as shown in Figure 12.

6.22 Reconnect the System I/O cable and secure its thumb screws.

6.23 Reconnect and secure the cables previously removed from the power supply.

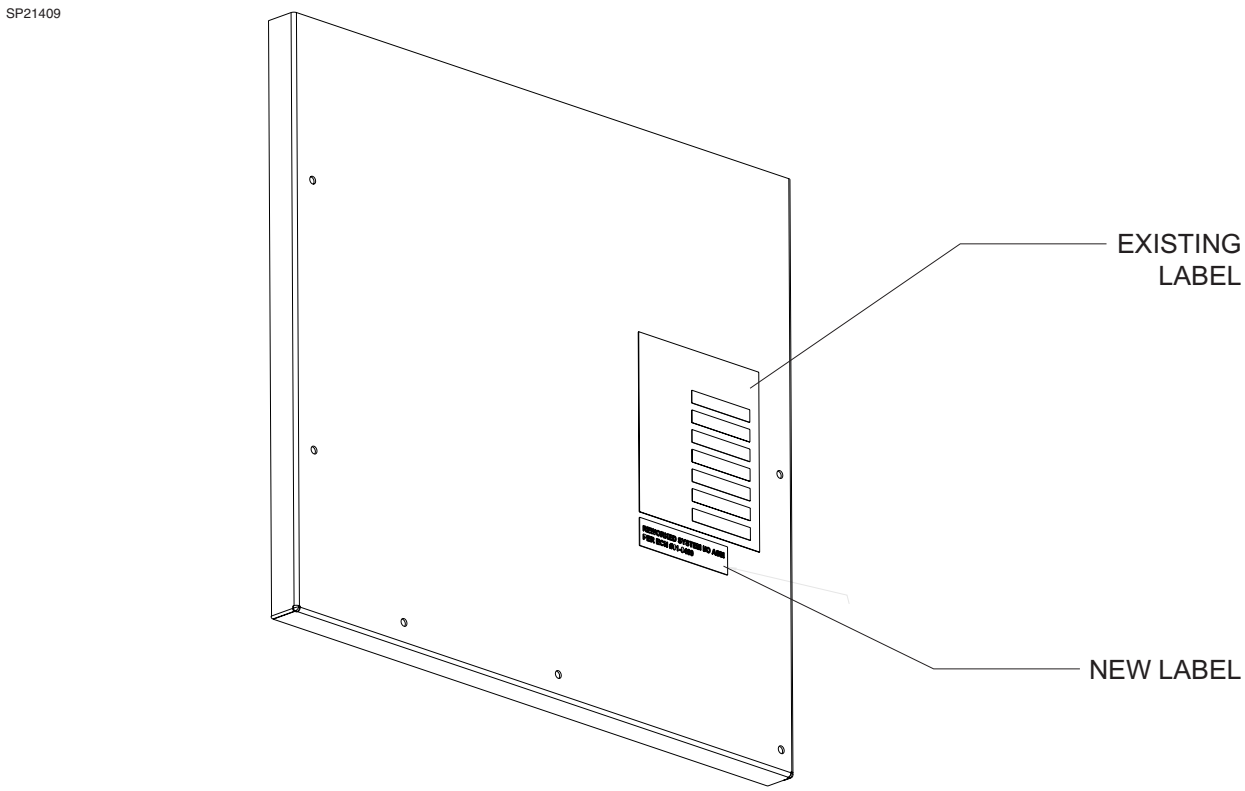

FIGURE 12. System I/O Rework Label

Installation Procedures (continued)

NOTE: With system software version 2.06, the reactivation of Low Flow Wizard and or Air Only Mode software options requires a correctly configured Keylok secured to the WPU printer port, and also requires the software option to be enabled in the Advanced Service menu.

WARNING: The “Air Only Mode” software option requires the machine to be configured with an Air yoke assembly and fitted with an Air cylinder containing at least 1000 psi.

6.24 Look at the rear of the Narkomed 6000 near the serial number tag for the presence of the following labels that indicate the unit is authorized to receive one or more of the optional features:

“Low Flow Wizard Enabled”
“Air Only Mode”
“Low Flow Wizard & Air Only Mode”

NOTE: The Low Flow Wizard option shall be activated on all DMI demo units even if the unit does not have a Low Flow Wizard Enabled label. The “Low Flow & Air Only - Enabled” option shall be enabled on DMI demo unit S/N 10059.

6.25 If the machine is not a DMI demo or is not fitted with any of the above referenced option labels, skip to the next section.

6.26 Refer to the table below for the proper Keylok part number that must be fitted to the WPU parallel printer port.

Option Labels Affixed	Correct Keylok to use
Low Flow Wizard - Enabled	4116920-001 KEYLOK ASM - LOW FLOW WIZARD
Air Only Mode - Enabled	4116920-002 KEYLOK ASM - AIR ONLY MODE
Low Flow & Air Only - Enabled	4116920-003 KEYLOK ASM - LW FL WIZ & AIR ONLY

Installation Procedures (continued)

6.27 If applicable, obtain the correctly configured Keylok and secure it to the WPU printer port using a small slotted screwdriver. See Figure 13.

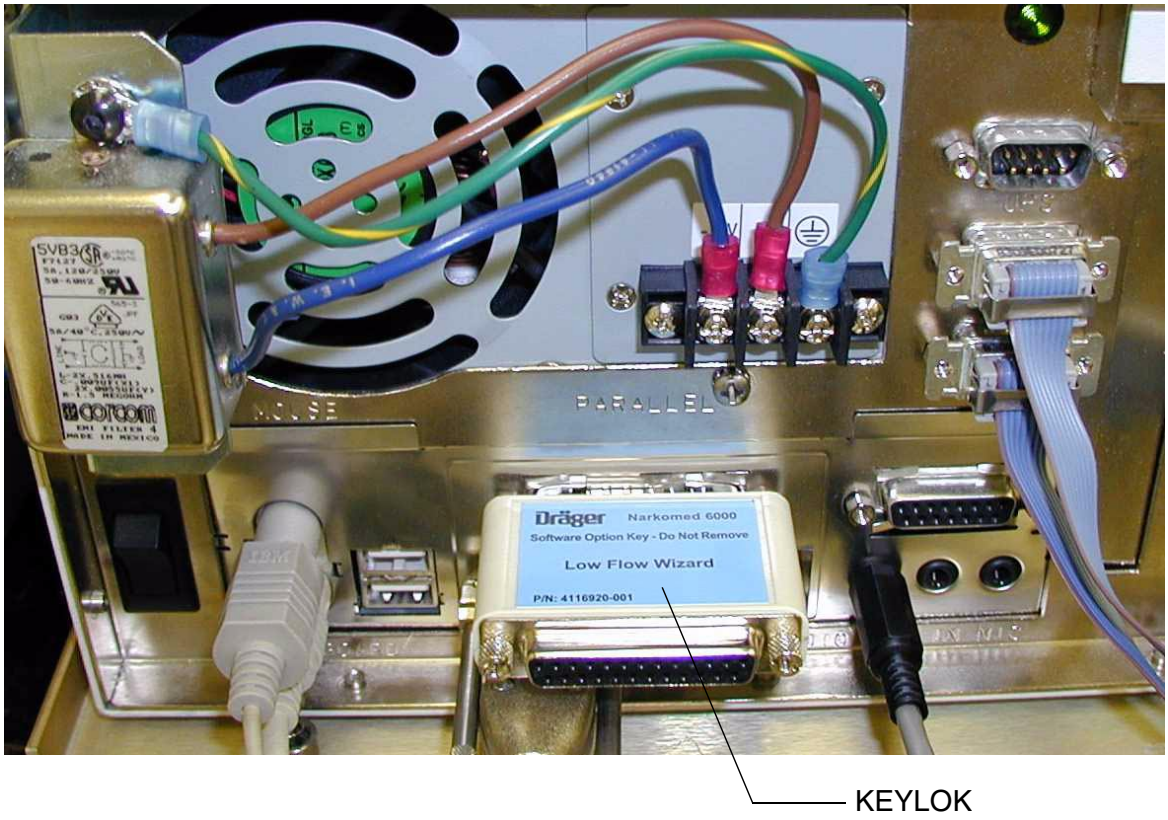

FIGURE 13. Typical Keylok Installation

Installation Procedures (continued)

6.28 Reinstall the back panel on the machine.

6.29 Swing the Vitalbus Hub door closed. Reattach the power cord strain relief retainer and reinstall the previously removed hardware.

6.30 Route the power cord's strain relief with a loop in a clockwise direction. The retaining clip shall be located 16.6 ± ¼ in. (5.25 in. diameter loop approx.) from the cord end, and secured to the Vitalbus Hub door using the mounting hole directly above the power cord socket as shown in Figure 14.

6.31 Reinstall the cylinders in their yokes.

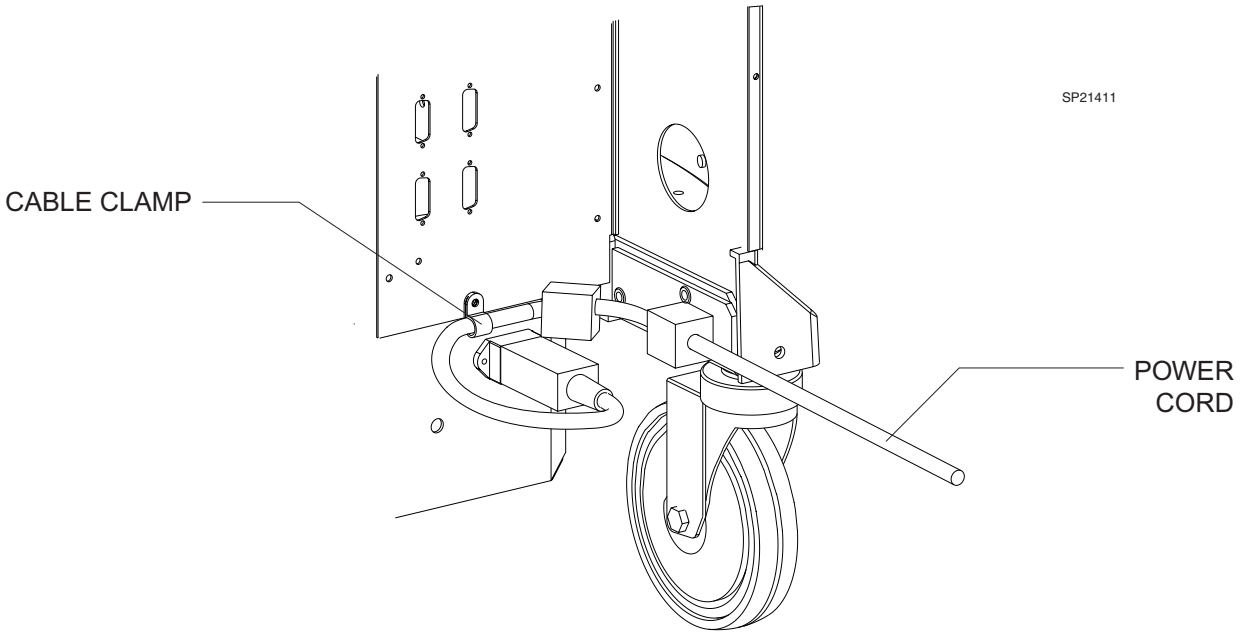

FIGURE 14. Power Cord Routing

7.0 Gas Analyzer Updates

7.1 Turn the System Power switch to STANDBY.

7.2 Remove AC power from the machine and pull all circuit breakers to their 'out' position.

7.3 Disconnect the semi-permeable tube a the water trap.

7.4 Loosen the captive mounting screw on the gas analyzer and remove the assembly.

7.5 Disconnect the Vitalbus cable and the exhaust line at the back of the gas analyzer.

CAUTION: Use ESD protection when servicing the analyzer assembly. Static discharge can damage PC board components.

7.6 Remove the back cover from the analyzer assembly. There are four screws on the bottom and one screw at the back.

7.7 Loosen the two upper screws securing the left side panel of the analyzer and swing open the panel. See Figure 15.

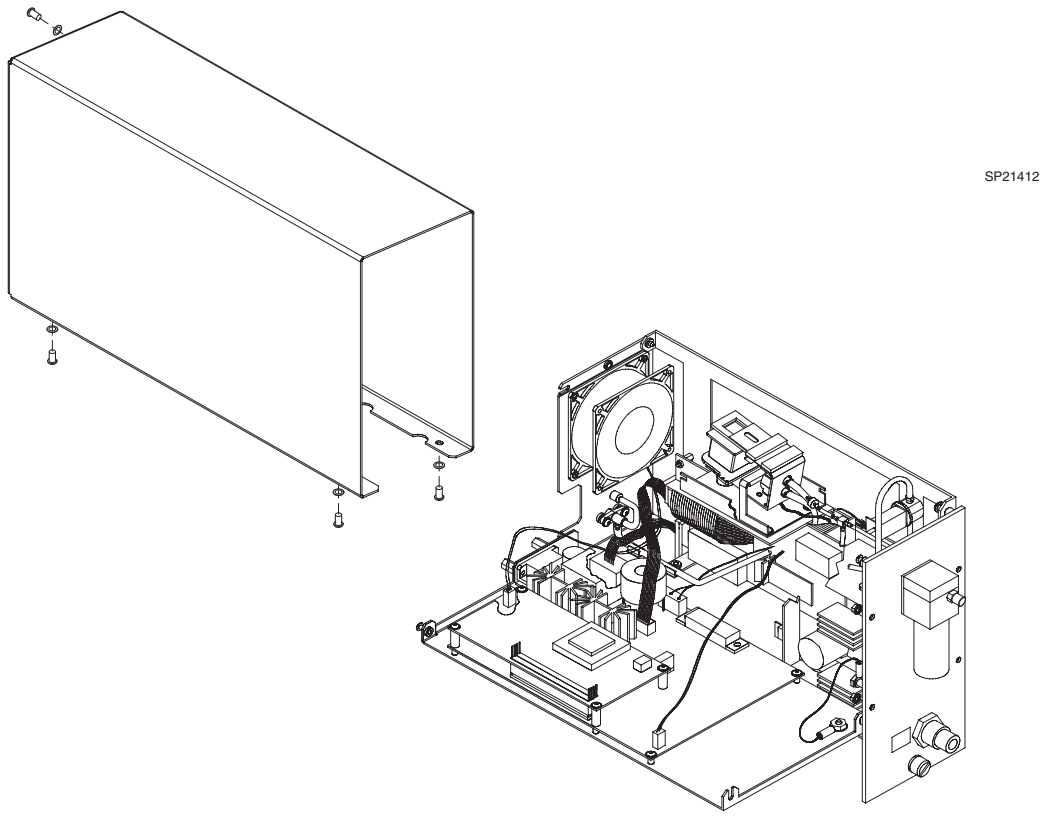

FIGURE 15. Gas Analyzer Assembly

Installation Procedures (continued)

7.8 Remove the upper left (facing the back of the machine) back panel from the machine. If there is a significant amount of dust and lint buildup in the monitor compartment, flowmeter housing, Vitalbus, GAP, cockpit vent, or power supply, use a current limiting ESD vacuum cleaner (Ohmega Supreme or equivalent) to eliminate the debris.

7.9 Verify all data and electrical cables are completely seated in their corresponding sockets. If the connection has thumbscrews, verify both are secure.

7.10 Reinstall the upper left back panel.

7.11 Locate and carefully remove the GAP firmware on the GAP personality PCB at Location U3.

7.12 On the new GAI firmware P/N 4114599-001: peel back the label's edge to verify the location of its dimple. Orient the firmware as shown in Figure 16 and insert it firmly into the socket.

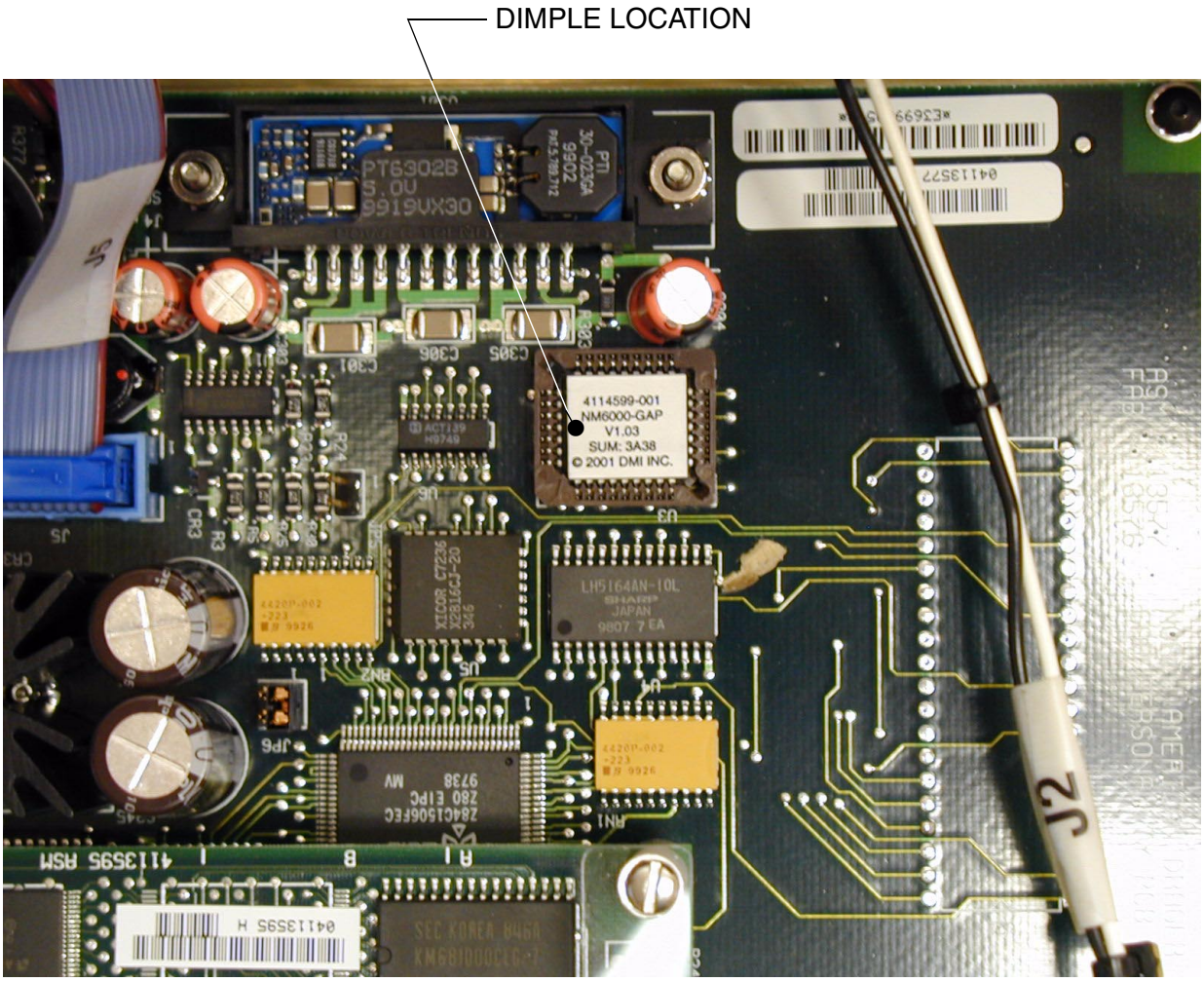

FIGURE 16. GAP Personality PCB

Installation Procedures (continued)

7.13 Attach a new IRIA gas analyzer ID label P/N 4116621 to the top right front corner of the IRIA as shown in Figure 17.

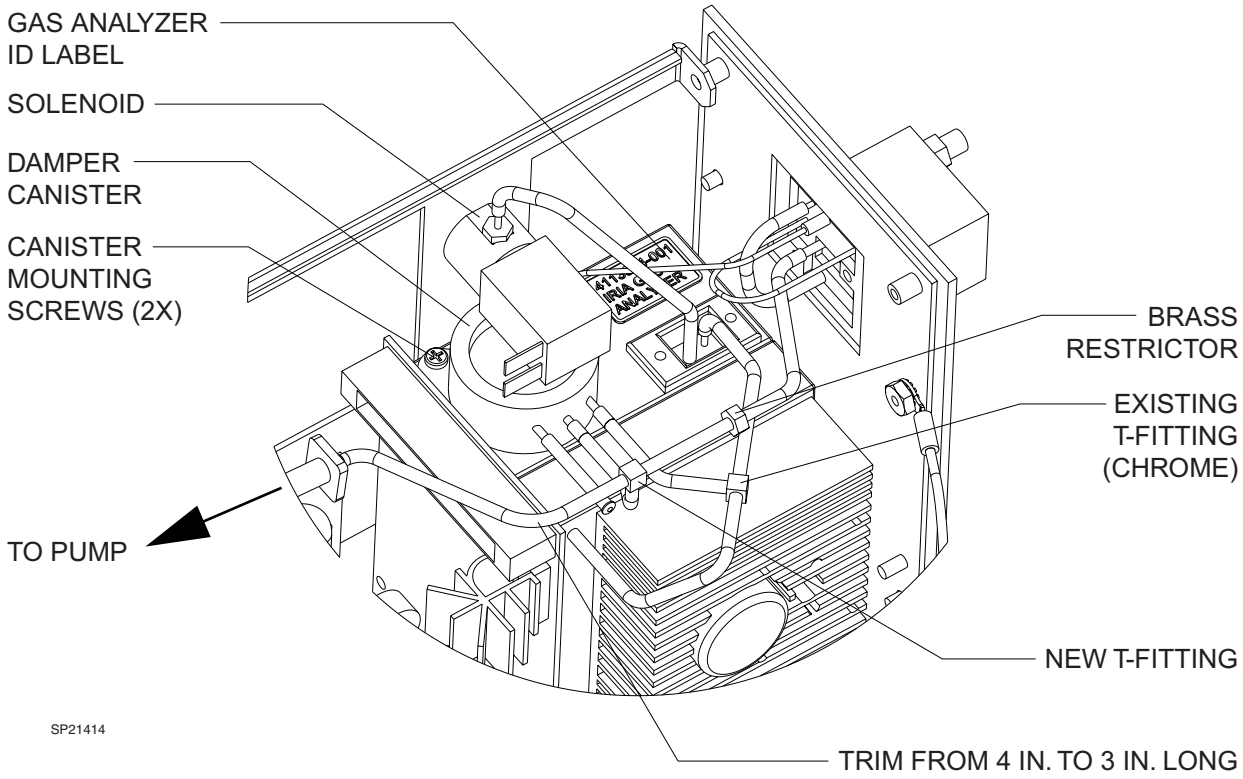

FIGURE 17. Gas Analyzer Tube Routing

7.14 Disconnect the small diameter tubing from the T-fitting leading to the pump assembly and trim this tube from 4 in. long to 3 in. long.

7.15 Disconnect the larger semi-transparent tube from the chrome T-fitting.

7.16 Disconnect the remaining smaller diameter tubes from the white T-fitting and discard this T assembly.

7.17 Connect the open port on the chrome T-fitting to the tube on the right side of the damper.

7.18 Install a new T-fitting P/N 4102337 onto the tube leading to the pump and the tube leading to the brass restrictor. Connect the remaining T port to the center port on the damper.

7.19 Secure the damper canister assembly P/N 4117237 in the existing holes at the top of the IRIA, and secure the assembly using two self-tapping screws P/N HW13004.

7.20 Check to ensure the lower tube connection from the solenoid is routed behind the damper canister.

Installation Procedures (continued)

7.21 Locate the Model/Serial Number label at the rear of the analyzer. Install the correct new model label (see table below) over the existing label.

Original Label	New Label	New Label Part Number
4112970-002	4112970-006	4116629-001
4112970-005	4112970-007	4116629-002

7.22 Close the left hinged side of the analyzer and tighten the retaining screws.

7.23 Reinstall the cover on the analyzer.

7.24 Reconnect the Vitalbus cable and the exhaust line to the back of the analyzer.

7.25 Slide the analyzer into the machine and secure it with its captive mounting screw.

7.26 Restore AC power to the machine and enable the circuit breakers.

7.27 Perform the Agent Monitor Sample Flow Calibration after completing the remaining sections of this procedure. Refer to Section 5.6 of the Narkomed 6000 Technical Service Manual.

Installation Procedures (continued)

8.0 Installing the NM6K Software Version 2.06

Table 8-1. Hardware Requirements

Part Number	Description
4113989-001 or *4113989-002	Vitalan cable 2 ft Vitalan cable 6 ft *recommended if LAN card is not fitted with extension cable
3C58D-TP	Ethernet card and cable, or equivalent
N/A	Laptop Computer: Must be capable of supporting Windows 95, Windows 98, or Windows NT, have an Ethernet LAN card installed, and CD-ROM drive interface. 500 MB free disk space required: Must be configured to share files.
4115133	Standard Windows keyboard with PS/2 style connector

NOTE: Install LAN card drivers if necessary and confirm the share properties configuration. Refer to Table 8-2 for laptops with Windows 95 or 98, or Table 8-3 for laptops with Windows NT

.

Installation Procedures (continued)

Table 8-2. Configuring Windows 95, 98 Laptop

1. Power up the laptop.
2. Ensure that the Ethernet card and driver are installed. If uncertain, contact your system administrator.
3. Select 'Start->Programs->Windows Explorer' from the task bar.
4. Right click 'Network Neighborhood'
5. Select the PROPERTIES button.
6. Select the 'Identification' tab.
7. Enter the following data (as necessary):
8. Computer Name: srvlap
9. Work Group: Service
10. Select the 'Configuration' tab.
11. Select the 'TCP/IP -> PCMCIA' item.
12. Click the 'Properties' button.
13. Select the 'IP Address' tab.
14. Select the 'Specify an IP address' radio button.
15. Set the following fields: IP Address 172.28.0.130 (After entering the 2nd and 3rd set of numbers, use the space bar to advance to the third and fourth sets.)
16. Subnet mask: 255.255.0.0 - Press OK.
17. Select the 'Access Control' tab.
18. Select the 'Share-level access control' radio button.
19. Click OK.
20. Ensure that the directory 'NAD Software\NM6K' exists on the C:\ drive.
21. Right click the 'NAD Software' directory.
22. Select the 'Sharing' menu item.
23. Select the 'Sharing' tab.
24. Select the 'Share As...' radio button.
25. Ensure that 'NAD Software' appears as the share name.
26. Click APPLY, then OK.
27. *Turn off the Dial-Up modem*
28. Right click 'My Computer'.
29. Select the 'Properties' menu item.
30. Select the 'Device Manager' tab.
31. Expand 'Network Adapters' by clicking the '+' box on the line.
32. Select the Dial-up adapter.
33. Select the PROPERTIES button.
34. **Select 'Disable in this hardware profile'.
35. Click OK.
36. Close all open windows.
37. Select 'Start->Shut Down' from the task bar.
38. On the 'Shut Down Windows' dialog select 'Restart the Computer?'.
39. Select 'Yes'.
40. *The system will perform a SYSTEM REBOOT. This may take several minutes.*

LAPTOP CONFIGURATION COMPLETE

**This hardware profile must be restored after completing the software installation or the modem will not operate correctly.

Installation Procedures (continued)

Table 8-3. Configuring Windows NT Laptop

1. Power up the laptop computer. When prompted for a password, enter 'password'. If the password has been changed, contact your System administrator.
2. Ensure that the Ethernet card and driver are installed. If uncertain, contact your system administrator.
3. Verify the computer name for the laptop, ie: SRVLAP042. If unknown, this information can be found as follows:
   From the Windows NT Desktop:
   -- Right click on the Network Neighborhood
   -- Select the Properties button
   -- Select the Identification tab
   -- The computer name will be listed in the 'Computer Name:' field.
4. Update the TCP/IP address to communicate with the NM6000:
   From the Windows NT Desktop:
   -- Right click on the Network Neighborhood
   -- Select the Protocols tab.
   -- Click once on the 'TCP/IP Protocol' entry in the list of Network Protocols.
   -- Click on the 'Properties' button.
   -- Click on the 'Adapter' item.
   -- Select 'Specify an IP address' radio button
   -- Enter the following 'IP Address:' 172.28.0.90 (After entering the second set of IP address numbers, use the space bar to advance to the third and fourth sets.)
   -- Enter the following 'Subnet Mask:' 255.255.0.0
   -- Select 'Apply' then 'OK' to close the 'TCP/IP Properties' dialog.
   -- Select 'OK' to close the 'Network' dialog.
   -- Shut down then restart the laptop computer for the new Network settings to take effect.
5. On the Laptop computer:
   -- Right-click the 'Start' key
   -- Select 'Explorer'
6. At the (C:) prompt, select NAD Software folder. If none is present, create it:
   'File'->'New'->'Folder', name it 'NAD Software'
   -- Right-click 'NAD Software'
   -- Select 'Sharing...'
   -- Select the 'Shared As:' radio button
   -- Click on the 'permissions...' button
   -- At the 'Type of Access:' field select 'Full Control'
   -- Verify the presence of a 'NM6K' folder. If none is present, create it:
7. Select 'NAD Software'... 'File'... 'New'... 'Folder', name it 'NM6K'.

Installation Procedures (continued)

NOTE: These instructions assume that the NM6000 2.06 installation wizard program was previously run to load the CD-ROM files onto the laptop hard drive. If this was not done, do it now.

8.1 With the NM6000 System Power switch at STANDBY, connect the keyboard to the DIN connector on the underside of the NM6000 cockpit area. See Figure 18.

8.2 With the Laptop computer's power switched off, connect the Vitalbus cable P/N 4113989-001 or 4113898-002 to any Vitalbus port (J4 thru J7) on the NM6000. Then join it to the laptop's LAN cable as shown in the illustration.

NOTE: If the laptop is provided with a modem card separate from the LAN card, remove the modem during this procedure.

8.3 Power up the laptop and enter your network password as "password" when prompted.

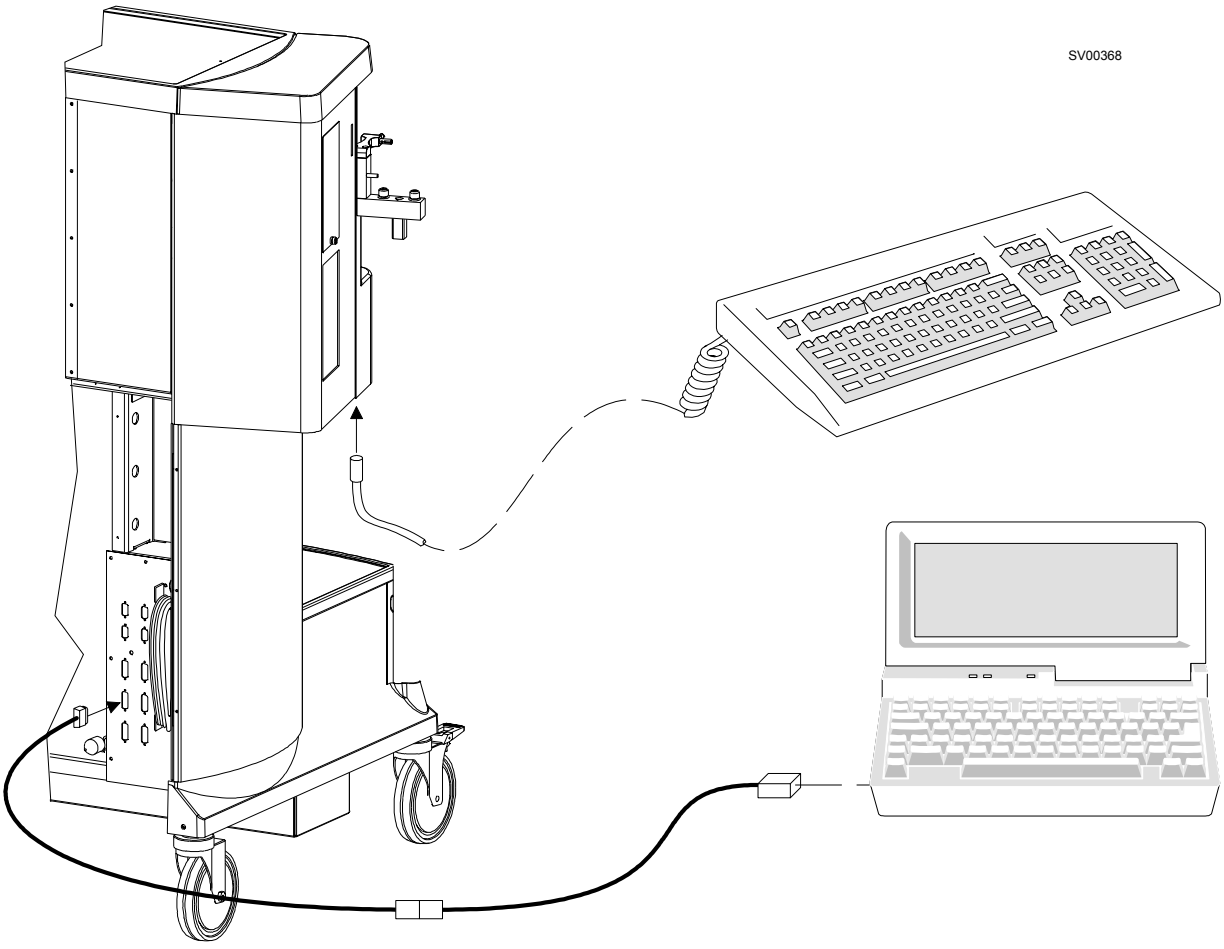

FIGURE 18. Keyboard and Laptop Connections

Installation Procedures (continued)

NOTE: If using a Windows NT laptop, you must press 'Ctrl'+'Alt'+'Delete' to log on and add your unique number to the 'Computer Name:' information, ie: 'SRVLAP**042**'. Also your 'Domain' information should be the same as your 'Computer Name' 'SRVLAP042'.

NOTE: If your Password, Computer Name or Domain has been changed, contact your administrator if this information is not known.

8.4 Turn the NM6000 System Power switch to ON. Press the Divan Standby key and wait for the NM6K to complete its startup sequence.

8.5 Access the main service screen. Record the WPU Serial Number listed on the main Service Menu page. Press the cancel key to exit from the service mode.

NOTE: You will need to have this serial number available later in the update.

8.6 On the keyboard connected to the NM6000, press the ESC key several times. The next sequence of commands must be performed quickly and in this exact order:

- Press and hold the CTRL key, press the F9 key, release the CTRL key, release the F9 key.
- Press and hold the ALT key, press the F9 key, release the ALT key, then release the F9 key.

NOTE: You may need to repeat the previous step several times to disable the keyboard filter if you are not able to perform the next step. While the filter is active, no key strokes are passed to any application or the operating system. The following steps will not work if you are NOT successful in disabling the keyboard filter. THERE IS NO PHYSICAL INDICATION THAT THE FILTER HAS BEEN DISABLED.

8.7 On the keyboard connected to the NM6000, press the Windows key or CTRL+ESC to bring up the Start menu.

8.8 Select 'Settings->Control Panel' from the task bar.

NOTE: When navigating using the touch screen, use a narrow blunt object for making selection. When an item is selected it will be highlighted and a dotted outline will appear around the text.

8.9 On the 'Control Panel' dialog select the 'ELO Touchscreen' icon, then press Enter. See Figure 19.

NOTE: If there are multiple ELO Touchscreen listings, select the first entry.

Installation Procedures (continued)

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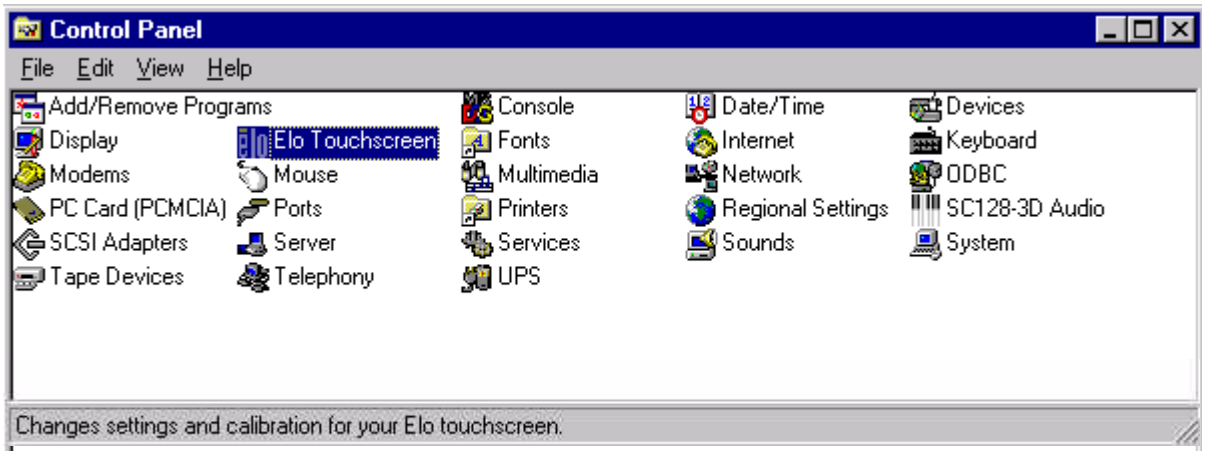

FIGURE 19. Control Panel Example

8.10 On the 'ELO Touchscreen' dialog, press the 'Calibrate' button. See Figure 20.

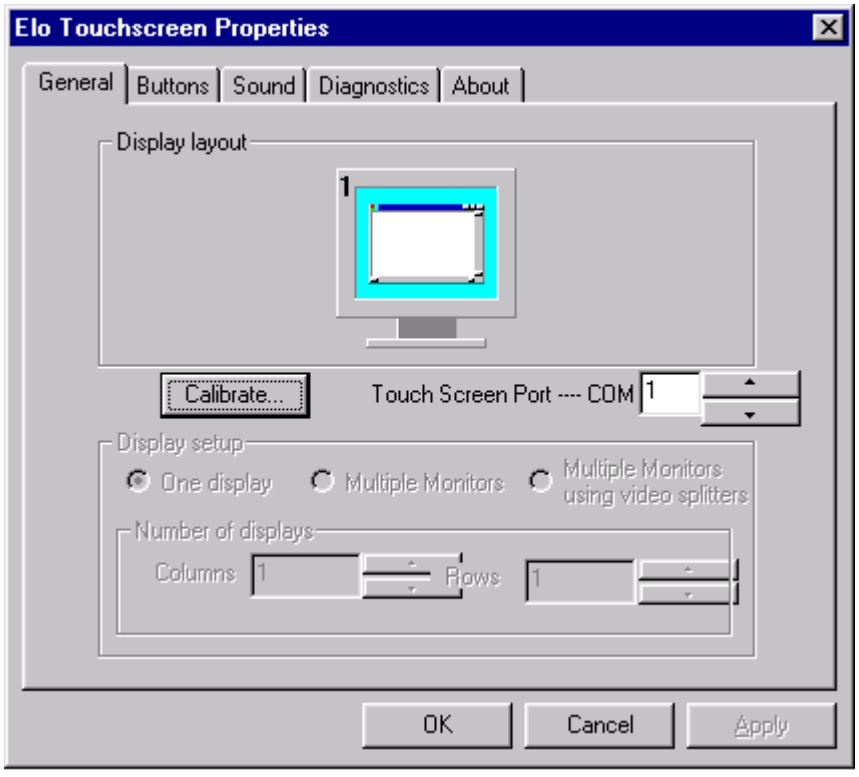

FIGURE 20. Touchscreen Dialog

Installation Procedures (continued)

8.11 Touch the screen at the specified three locations. Verify that the touchscreen is calibrated by touching at different locations. Verify that you can position the cursor in all four corners

8.12 Select the Sound tab and verify 'Enable Click Sounds' is deselected, then press OK. If 'Enable Click Sounds' is selected, deselect it and press OK.

8.13 From the Control Panel dialog box, select the Display icon and press Enter.

NOTE: DO NOT touch the Scheme drop down box. If you accidentally select this field, press the Cancel button and repeat the Appearance setting section of this procedure

8.14 On the 'Display Properties' dialog, select the 'Appearance' tab.

8.15 Select the 'Item' drop down box, and select 'Icon'. See Figure 21.

.

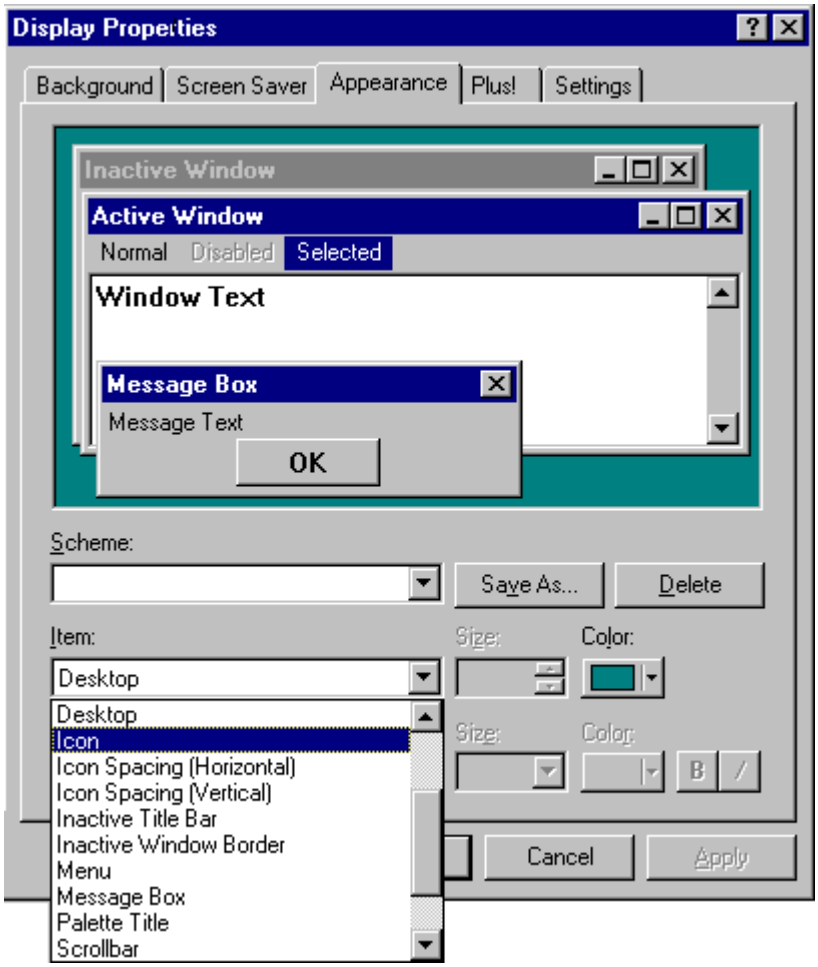

FIGURE 21. Display Properties Dialog, Item Settings

Installation Procedures (continued)

8.16 Ensure that the font 'MS Sans Serif' is selected.

8.17 Touch the font 'Size' drop down box and set the point size to '12'. See Figure 22.

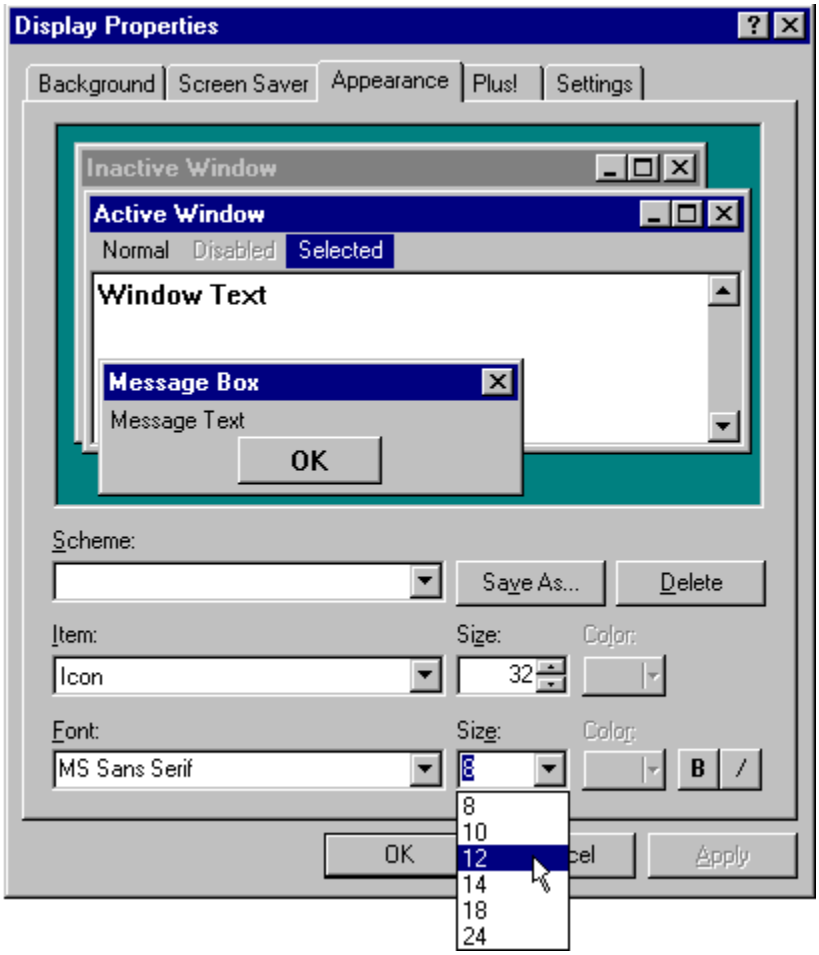

FIGURE 22. Display Properties Dialog, Icon Font Settings

Installation Procedures (continued)

8.18 Touch the Item drop down box. Select the 'Scrollbar' item and press Enter.

8.19 Touch the screen at the scrollbar 'Size' field, then press and hold the keyboard arrow Down key down to reduce the scroll width to its minimum setting.

8.20 Touch the 'Apply' button.

8.21 Touch the Item drop down box again and select the 'Scrollbar item. Press Enter.

8.22 Touch the screen at the scrollbar 'Size' field, then use the keyboard arrow Up key to adjust the scrollbar size to a value of 50. See Figure 23.

8.23 Touch the 'Apply' button, then click OK.

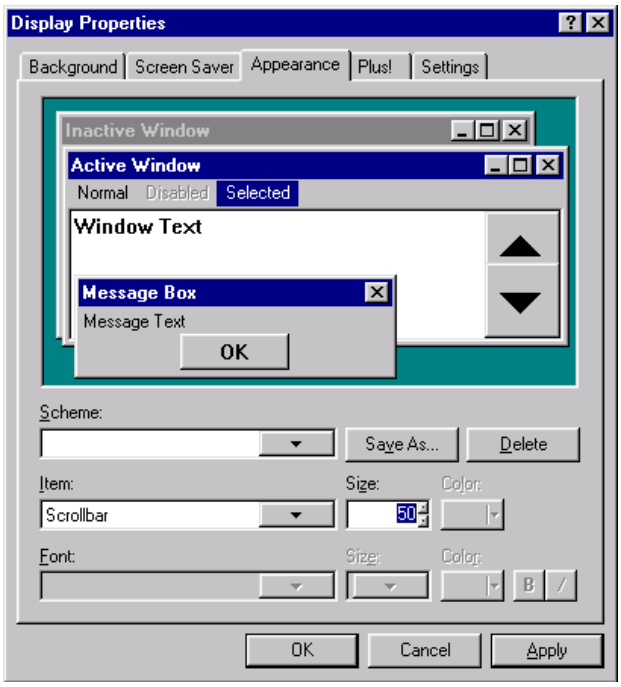

FIGURE 23. Display Properties Dialog, Scrollbar Settings

Installation Procedures (continued)

8.24 Close the open screen by pressing the 'ALT+F4' keys on the keyboard.

8.25 On the keyboard press the Windows key or 'CTRL+ESC' keys.

8.26 Select 'Start->Shutdown' from the task bar. The 'Shut Down Windows' dialog box will appear.

8.27 Select 'Restart the computer?' radio button, then press Enter.

8.28 Press the Restart button and allow the system to reboot, then press the Conditionally Functional button.

8.29 On the keyboard connected to the NM6000, press the ESC key several times. The next sequence of commands must be performed quickly and in this exact order:

- Press and hold the CTRL key, press the F9 key, release the CTRL key, release the F9 key.
- Press and hold the ALT key, press the F9 key, release the ALT key, then release the F9 key.

NOTE: You may need to repeat the previous step several times to disable the keyboard filter if you are not able to perform the next step. While the filter is active, no key strokes are passed to any application or the operating system. The following steps will not work if you are NOT successful in disabling the keyboard filter. THERE IS NO PHYSICAL INDICATION THAT THE FILTER HAS BEEN DISABLED.

8.30 Press CTRL+ALT+DEL to display the Windows NT Security dialog box as shown in Figure 24.

8.31 Touch the 'Task Manager' button to launch the Windows NT Task Manager dialog.

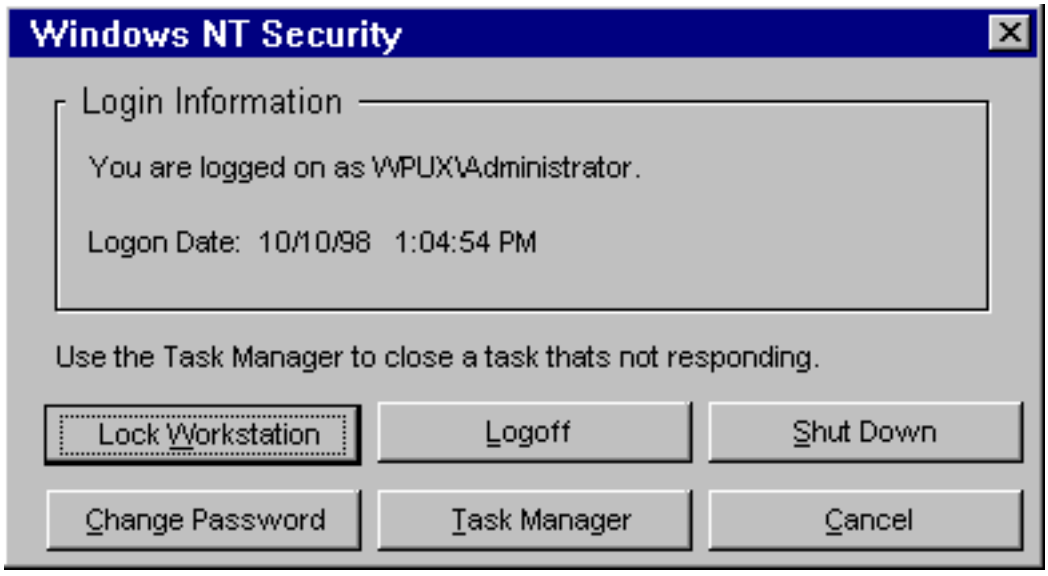

FIGURE 24. Windows NT Security Dialog Box

Installation Procedures (continued)

8.32 Touch the 'Applications' tab page.

8.33 Using the cursor, select the 'SYSTEM 1 MANAGER' application.

8.34 Touch the 'End Task' button.

8.35 Touch the 'Processes' tab page.

8.36 Touch the screen at the 'GSPLUS.exe' file.

8.37 Touch the 'End Process' button.

8.38 Touch 'Yes' to end the task.

8.39 On the keyboard connected to the NM6000, type 'ALT+F4' to close the 'Window NT Task Manager'.

8.40 On the keyboard connected to the NM6000, press the Windows key or 'CTRL+ESC', then select 'Programs->Windows NT Explorer' from the task bar.

8.41 From the menu list at the top of the Explorer window select 'Tools\Map Network Drive...' then press Enter.

8.42 Touch the 'Drive' drop down window and select the 'E' drive.

8.43 Touch the 'Path' drop down arrow and select the '\\srvlap\NAD Software' path if using Windows 95 or Windows 98. If the path is not found, touch the 'Path' field to move the cursor, then use the keyboard connected to the NM6000 to enter this information.

NOTE: If using Windows NT you must add your unique number to the user name in the path file, ie: '\\srvlap**042**\NAD Software'

8.44 Touch the 'Connect As' field to move the cursor to this field. Then use the keyboard connected to the NM6000 to enter 'wpux'. See Figure 25.

8.45 Ensure that the 'Reconnect at Login check box is un-checked.

8.46 Click OK.

Installation Procedures (continued)

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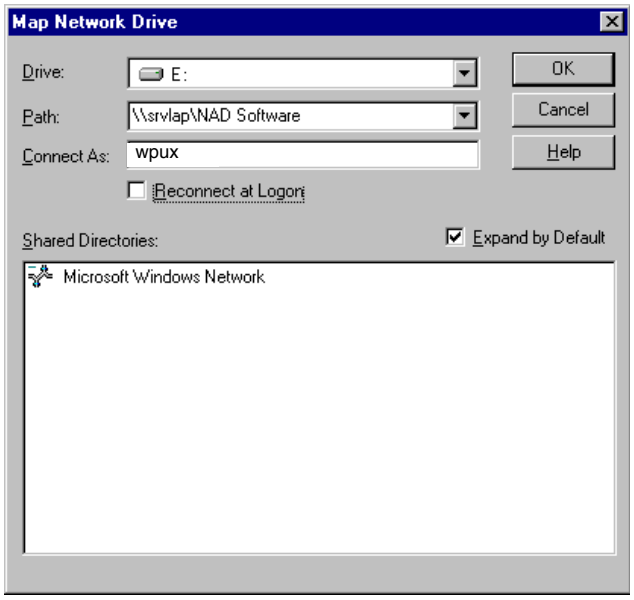

FIGURE 25. Example: Map Network Drive Dialog

NOTE: Skip to Step 8.48 if you are using Windows 95 or 98.

8.47 A Network Password window should soon appear indicating an incorrect user name or password. This is normal. Enter the computer's name (SRVLAP028) in the Connect As: field by removing the "\\" portion of this listed field. Also remove "\NAD software". Enter the word "password" in the Password field. Press the Enter key. See Figure 26.

.

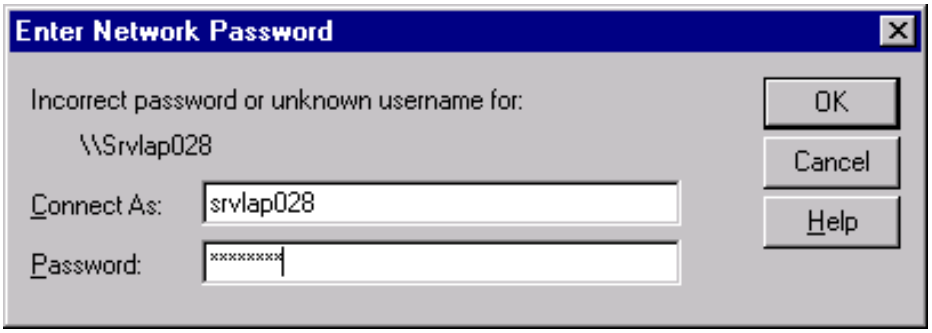

FIGURE 26. NT Laptop Password Dialog

Installation Procedures (continued)

8.48 Press F5 to refresh the display

8.49 On the keyboard connected to the NM6000, press the Windows key or 'CTRL+ESC'. Select 'Settings', 'Control Panel', select the 'Fonts' icon, and press Enter.

8.50 Check to see if the 'NAD_CV' or 'NAD_NIBP' fonts are installed. If they are, remove them by selecting them, and press the Delete key on the keyboard connected to the NM6000. See Figure 27.

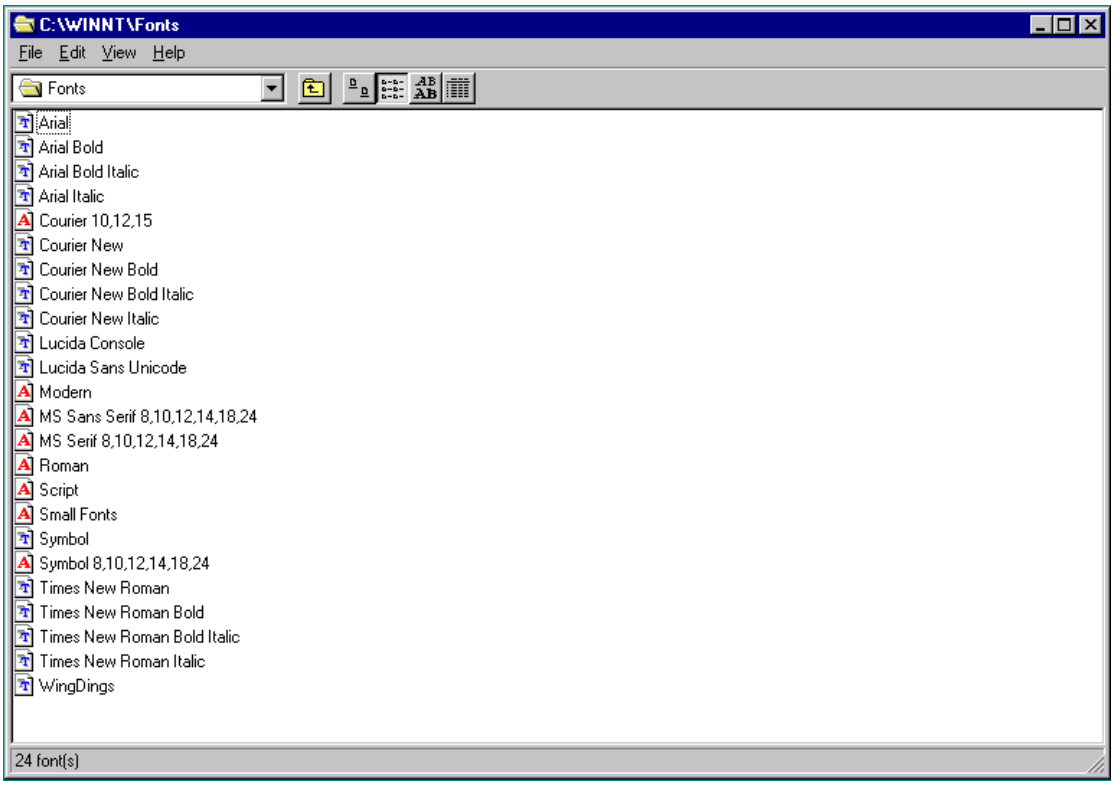

FIGURE 27. Example of Fonts Dialog

Installation Procedures (continued)

8.51 Select the 'File' pull down menu located at the top of the window and select 'Install New Font...'

8.52 Touch the 'Drives' drop down menu. Use the arrow key on the keyboard connected to the NM6000 to select directory folder 'e:\\srvlap\NAD Software', then press Enter. See Figure 28.

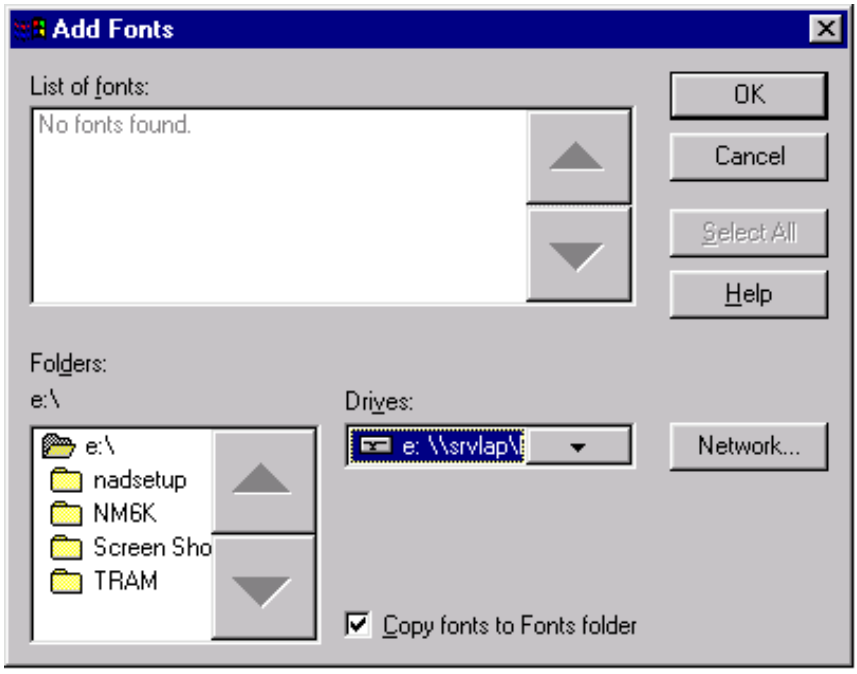

FIGURE 28. Add Fonts Dialog

Installation Procedures (continued)

8.53 Touch the 'nadsetup' file then press Enter on the keyboard connected to the NM6000. Select '2.2' and press Enter. Select 'fonts' and press enter.

8.54 While holding down the Shift button on the keyboard connected to the NM6000, select the fonts 'NAD_CV(TrueType)' and 'NAD_NIBP(TrueType)', then click OK. See Figure 29.

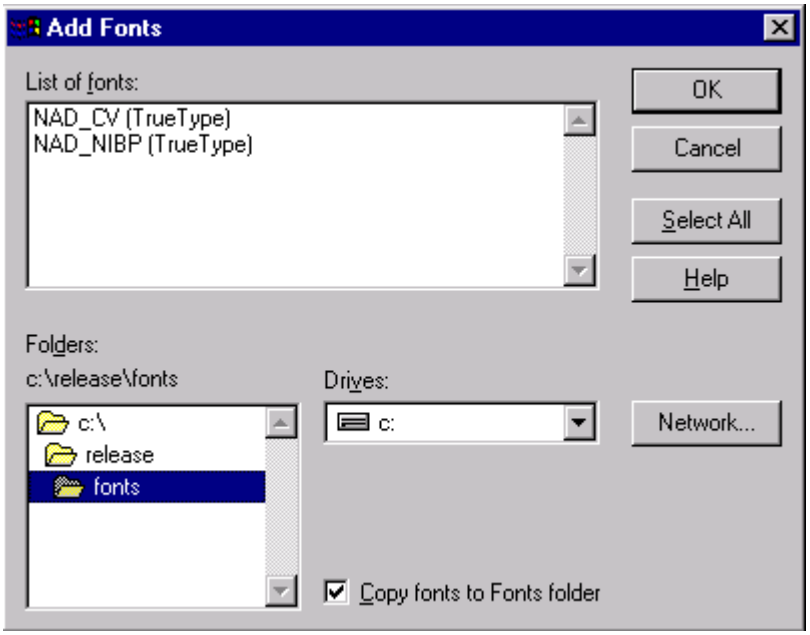

FIGURE 29. Add Fonts Dialog continued

Installation Procedures (continued)

8.55 Repeat Step 8.49 and verify 'NAD_CV' and 'NAD_NIBP' fonts are installed.

8.56 Press 'ALT+F4' to close the open windows.

8.57 Press 'CTRL+ESC' to display the 'Start' key. Using the arrow keys, select 'programs', Windows NT Explorer', then press Enter.

8.58 Select 'e:\\srvlap\NAD Software' drive and its folders.

NOTE: If using a Windows NT laptop, select its unique computer name.

8.59 Select the 'nadsetup' file and press Enter. Select 'v2.2' and press Enter.

8.60 Use the arrow key on the keyboard connected to the NM6000 to select 'Install.bat', then press Enter to run the NAD Install program.

8.61 On the 'NAD Installation' dialog, ensure that 'NM6K is selected as the program. See Figure 30.

8.62 Ensure that 'TabPro' is checked under Applications.

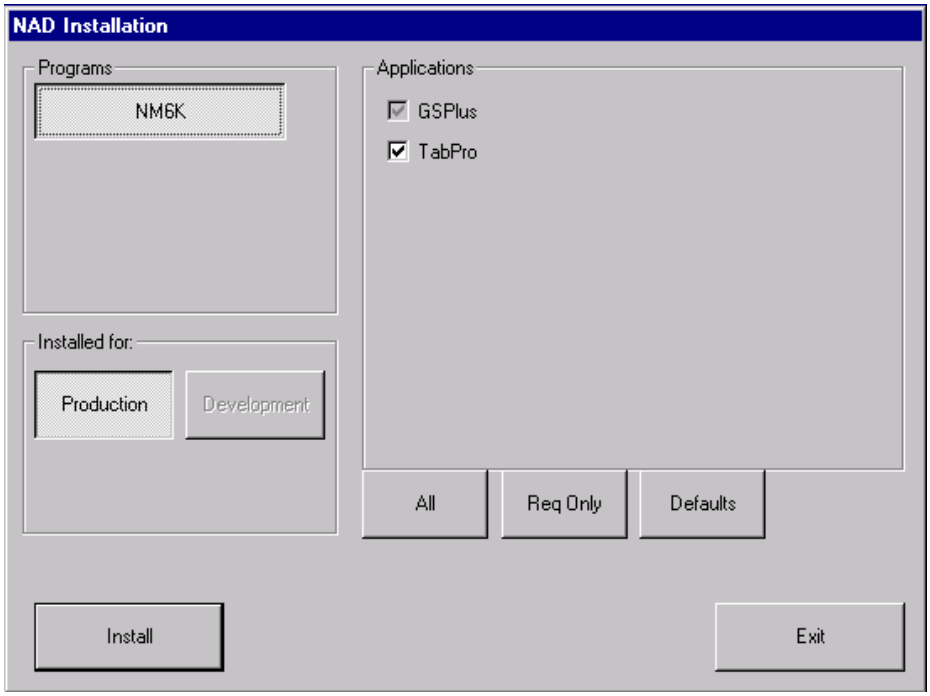

FIGURE 30. NAD Installation Dialog

8.63 Click the 'Install' button.

8.64 Click Yes to continue the software installation. See Figure 31.

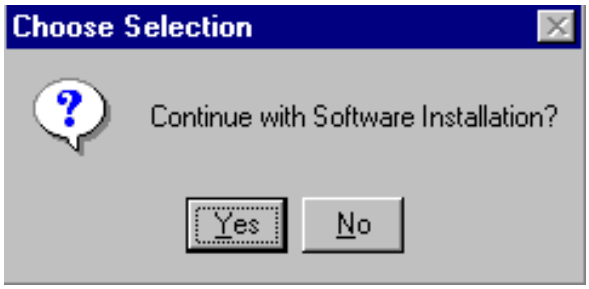

FIGURE 31. Continue Installation Dialog

8.65 Click the 'OK' button on the 'Welcome' dialog. See Figure 32.

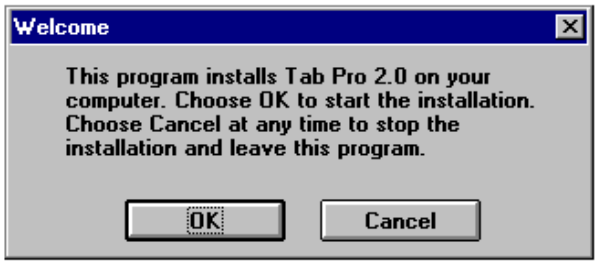
Welcome
This program installs Tab Pro 2.0 on your computer. Choose OK to start the installation. Choose Cancel at any time to stop the installation and leave this program.
OK
Cancel

FIGURE 32. TabPro Welcome Dialog

8.66 Click the 'Continue Install' button on the 'Important Information' dialog. See Figure 33.

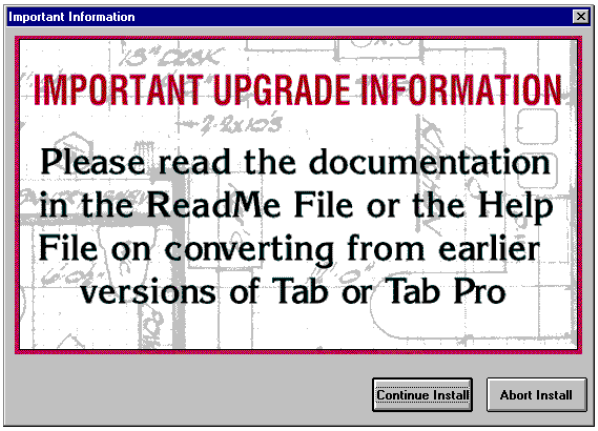
Important Information
IMPORTANT UPGRADE INFORMATION
Please read the documentation in the ReadMe File or the Help File on converting from earlier versions of Tab or Tab Pro
Continue Install
Abort Install

FIGURE 33. TabPro Important Information Dialog

8.67 Click the 'OK' button on the 'License Information' dialog. See Figure 34.

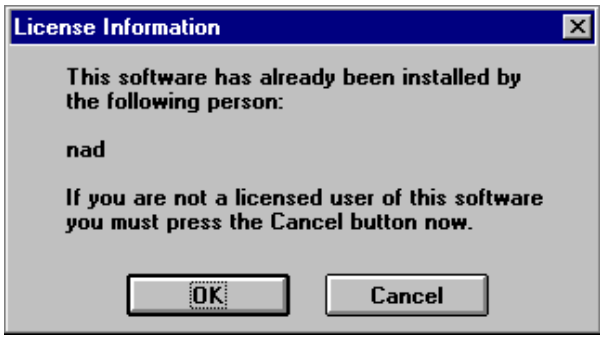
License Information
This software has already been installed by the following person:
nad
If you are not a licensed user of this software you must press the Cancel button now.
OK
Cancel

FIGURE 34. TabPro License Information Dialog

8.68 On the 'Select Destination Directory' press the 'OK' button to continue. See Figure 35.

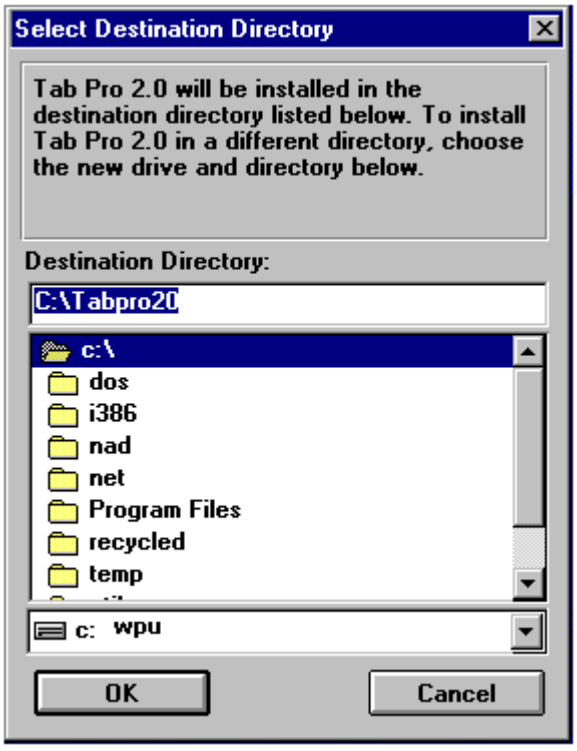

FIGURE 35. TabPro Destination Directory Dialog

Installation Procedures (continued)

8.69 Select the 'No' button on the 'Make Backups' dialog. See Figure 36.

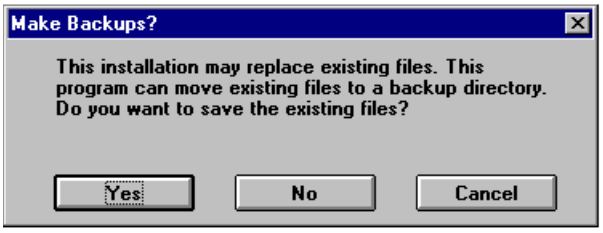
Make Backups?
This installation may replace existing files. This program can move existing files to a backup directory. Do you want to save the existing files?
Yes
No
Cancel

FIGURE 36. TabPro Backups Dialog

8.70 Un-check all selections EXCEPT the 'DLL-32 bit' and 'OCX-32 bit' components on the 'Select Components to Install' dialog as shown in Figure 37.

8.71 Touch the 'OK' Button .

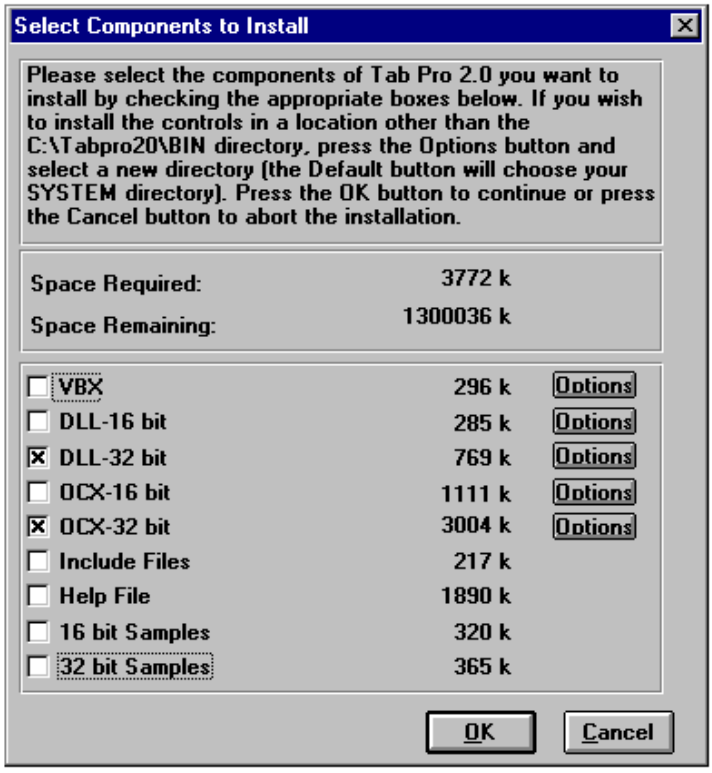
Select Components to Install
Please select the components of Tab Pro 2.0 you want to install by checking the appropriate boxes below. If you wish to install the controls in a location other than the C:\Tabpro20\BIN directory, press the Options button and select a new directory (the Default button will choose your SYSTEM directory). Press the OK button to continue or press the Cancel button to abort the installation.
Space Required: 3772 k
Space Remaining: 1300036 k
VBX 296 k Options
DLL-16 bit 285 k Options
DLL-32 bit 769 k Options
OCX-16 bit 1111 k Options
OCX-32 bit 3004 k Options
Include Files 217 k
Help File 1890 k
16 bit Samples 320 k
32 bit Samples 365 k
OK
Cancel

FIGURE 37. TabPro Select Components to Install Dialog

8.72 Touch the 'OK' button on the 'Converting projects to OCX' dialog. See Figure 38

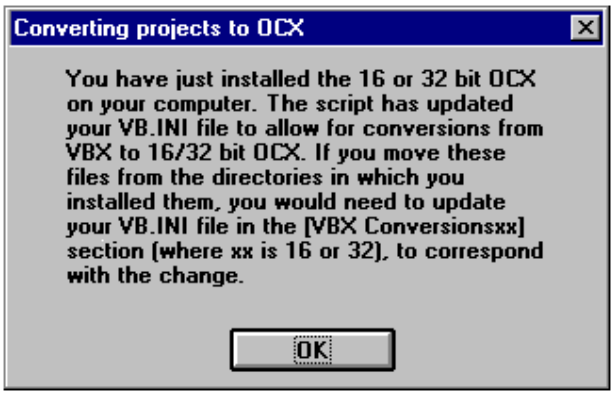
Converting projects to OCX
You have just installed the 16 or 32 bit OCX on your computer. The script has updated your VB.INI file to allow for conversions from VBX to 16/32 bit OCX. If you move these files from the directories in which you installed them, you would need to update your VB.INI file in the [VBX Conversionsxx] section (where xx is 16 or 32), to correspond with the change.
OK

FIGURE 38. TabPro Converting projects to OCX Dialog

8.73 Touch the 'No' button on the 'Install Icons?' dialog. See Figure 39.

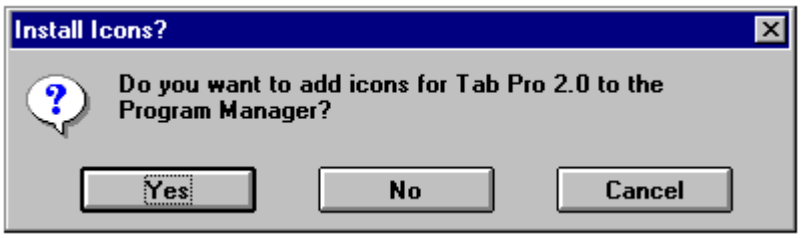

FIGURE 39. TabPro Install Icons Dialog

8.74 Touch the 'No' button on the 'End of Installation' dialog. See Figure 40.

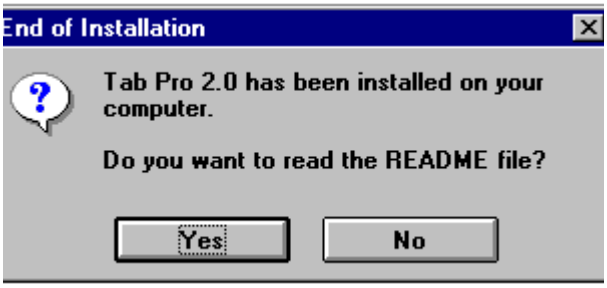

FIGURE 40. TabPro End of Installation Dialog

8.75 Touch the 'Enter NAD dir' field, then using the keyboard connected to the NM6000 type in the source directory as 'E:\NM6K\2.06', and press Enter. See Figure 41.

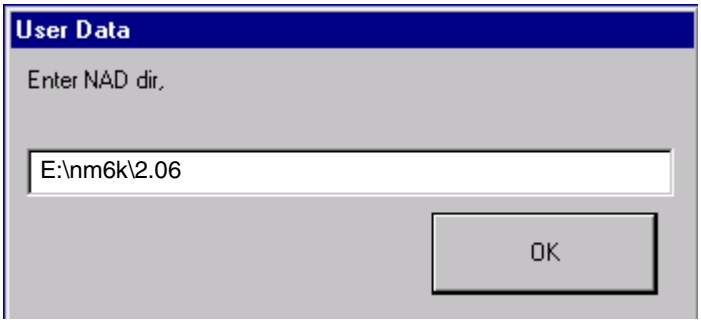

FIGURE 41. Source Directory Dialog

8.76 Touch the 'OK' button for the Sounds Off dialog. See Figure 42.

FIGURE 42. Sounds Off Dialog

Installation Procedures (continued)

8.77 Examine the communication ports on the Vitalbus assembly. If you have four communication ports - COM 5, COM 6, COM 7 and COM 8 (see Figure 43), then touch the 'Yes' button for 'Is isocomm board installed?' in the dialog box shown in Figure 44. Select the 'No' button if COM 5, COM 7 and COM 9 are covered with blank plates.

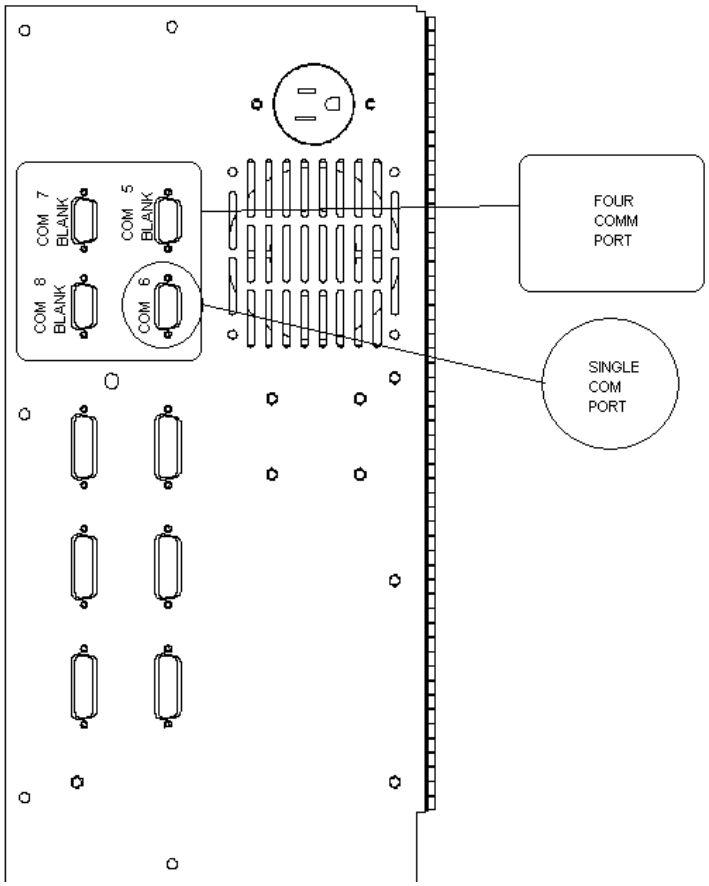

FIGURE 43. Vitalbus Communication Port Options

FIGURE 44. Isocomm Dialog

8.78 Verify the data displayed on the 'User Info' dialog (Figure 45) and record the results in the following table.

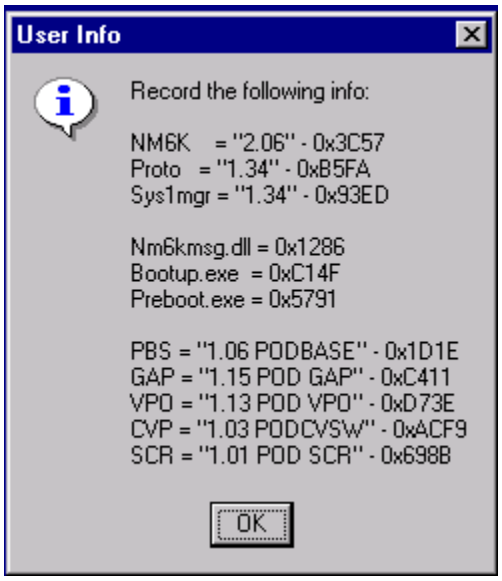
User Info
Record the following info:
NM6K = "2.06" - 0x3C57
Proto = "1.34" - 0xB5FA
Sys1mgr = "1.34" - 0x93ED
Nm6kmsg.dll = 0x1286
Bootup.exe = 0xC14F
Preboot.exe = 0x5791
PBS = "1.06 PODBASE" - 0x1D1E
GAP = "1.15 POD GAP" - 0xC411
VPO = "1.13 POD VPO" - 0xD73E
CVP = "1.03 PODCVSW" - 0xACF9
SCR = "1.01 POD SCR" - 0x698B
OK

FIGURE 45. Typical Version Data Dialog

Item	Expected Value	Actual Value
NM6K Version	2.06	
NM6K CRC	0x3C57	
Proto Version	1.34	
Proto CRC	0xB5FA	
Sys 1mgr Version	1.34	
Sys 1 mgr CRC	0x93ED	
NM6kmsg.dll CRC	0x1286	
Bootup.exe CRC	0xC14F	
Preboot.exe CRC	0x5791	
PBS Version	1.06	
PBS CRC	0x1D1E	
GAP Version	1.15	
GAP CRC	0xC411	
VPO Version	1.13	
VPO CRC	0xD73E	
CVP Version	1.03	
CVP CRC	0xACF9	
SCR Version	1.01	
SCR CRC	0x698B	

Installation Procedures (continued)

8.79 Touch the 'OK' button to continue.

8.80 Touch the 'WPU Serial Number' field. Using the keyboard attached to the NM6000, type the serial number (previously recorded from Step 8.5) into the 'User Data' dialog. See Figure 46.

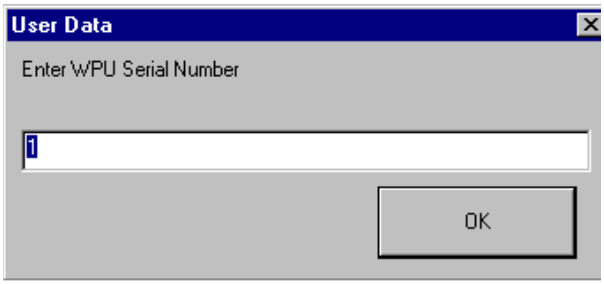

FIGURE 46. Typical Serial Number Dialog

8.81 Touch the 'OK' button to continue.

8.82 Touch the 'Yes' button on the 'Choose Selection' dialog. See Figure 47.

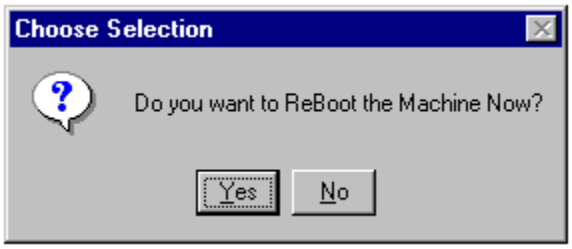

FIGURE 47. Reboot Machine Dialog

8.83 The machine will reboot at this time. This could take several minutes to complete.

8.84 After the machine reboots, sys1mgr will automatically start.

NOTE: If there are new pod images, the images will be loaded to the pods on the first startup.

8.85 Access the Primary Service screen. (Refer to Accessing the Service Screens in Section 2.1 of the Narkomed 6000 Technical Service Manual.)

8.86 Access the Advanced Service Mode. (Refer to Accessing the Service Screens in Section 2.2 of the Narkomed 6000 Technical Service Manual.) Select Service Config key, NM6K tab, select the SERVICE button and enter your Technicians ID #.

8.87 Touch the Update tab in the NM6000 CONFIGURATION to access the UPDATE Page. (Refer to Update Page in Section 2.4.2 of the Narkomed 6000 Technical Service Manual.) Press the VPO and GAP Pod Base keys to initiate the POD Base download. Also press CV and SCR keys if these options are present. See Figure 48.

Installation Procedures (continued)

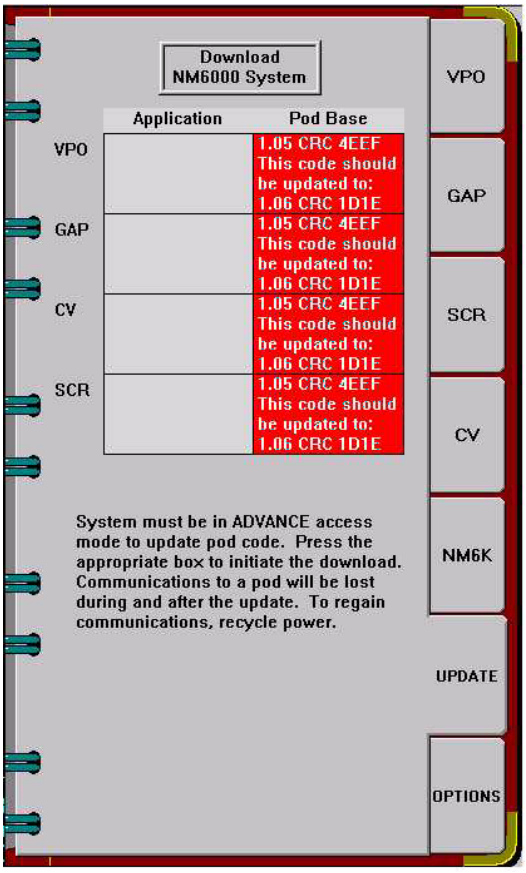

FIGURE 48. NM6000 Service Config Notebook Update Page

NOTE: When the key is pressed, the notebook disappears. Press the Service Config key to refresh the Service Config notebook.

8.88 After download is complete, exit from Service mode and cycle power.

8.89 Verify all Pods display Pod Based Software version 1.06 and CRC value 1D1E.

8.90 If the machine requires the reactivation of an Audible O2 Whistle, *Low Flow Wizard or *Air Only Mode optional feature, touch the Options tab in the NM6000 CONFIGURATION notebook to access the OPTIONS page. Touch the correct key to toggle the corresponding option to Enabled.

* Denotes a feature that requires a Software Option Keylok attached to the WPU parallel port for its activation.

WARNING: The “Air Only Mode” software option requires the machine to be configured with an Air yoke assembly and fitted with an Air cylinder containing at least 1000 psi.

8.91 Perform a periodic manufacturer’s Service on this machine. Refer to Section 6 of the Narkomed Technical Service Manual.

If applicable, also perform the IPM test procedure given in Section 6A of the Narkomed Technical Service Manual.

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NARKOMED 6000 FIELD ENHANCEMENT REPORT 2.06

After each modification is successfully completed or verified to have been performed previously, a check mark shall be entered in the PASS box, and initials entered into the TSR Initials box. If the machine is not equipped with an IPM pod or software options, indicate N/A in the corresponding line on the report. A Return Materials Authorzation (RMA) is required for Divan CPU1 PCB P/N SE8305141, Divan test plug P/N 4114550, and IPMM P/N SE4113461-001 if the machine is so equipped. A Technician's signature is required at the completion of each machine's upgrade. Within 24 hours of the completion of the upgrade the report shall be faxed to 215-721-5784, or a copy mailed to:

DrägerService
3122 Commerce Drive
Telford, PA 18969
Attention: Ken Horsfield

Hospital Name: _____

Street Address: _____ **Machine S/N** _____

City: _____ **Dispatch #** _____

State & Zip: _____

	2.06 Field Enhancement	PASS	TSR	RMA#
1	IPMM pod exchange SE4113561-001 with SE4113561-005			
2	IPMM Operator's Manual update to 2.06			N/A
3	Divan CPU1 upgrade to P/N SE6804038			
4	Divan CPU-2 Firmware Update to version 7.40			N/A
5	Narkomed 6000 Operator's Manual update to 2.06			N/A
6	Divan Shunt Plug reoved from O2 Flush pole			
7	Bag Arm installed containing purple O-ring			N/A
8	Label - Warning suction applied to Aux. Lamp or SCR			N/A
9	WPU System I/O clamp and bracket			N/A
10	WPU memory clips, expansion PCBs, sys cabling connections verifications			N/A
11	Software Options KeyLok installation			N/A
12	Gas Analyzer GAI update to version 1.04 & Damper Installation			N/A
13	2.06 Software Load and Versions and CRC verifications			N/A
14	Pod Based Software Update			N/A
15	Software Options activation			N/A

Software Version 2.06 Versions and CRC Values					
Item	Expected Value	PASS	Item	Expected Value	PASS
NM6K Version	2.06		PBS CRC	0x1D1E	
NM6K CRC	0x3C57		GAP Version	1.15	
Proto Version	1.34		GAP CRC	0xC411	
Proto CRC	0xB5FA		VPO Version	1.13	
Sys1mgr Version	1.34		VPO CRC	0xD73E	
Sys1mgr CRC	0x93ED		CVP Version	1.03	
Nm6kmsg.dll CRC	0x1286		CVP CRC	0xACF9	
Bootup.exe CRC	0xC14F		SCR Version	1.01	
Preboot.exe CRC	0x5791		SCR CRC	0x698B	
PBS Version	1.06				

Technician: _____ **I.D. #** _____ **DATE:** _____

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